The Harveian Oration

ON

THE STUDY OF STRUCTURE IN RELATION TO FUNCTION.

Delivered before the Royal College of Physicians of London on Oct. 19th, 1903,

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MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND GENTLEMEN,—In proceeding to discharge the duty which you, Sir, have laid upon me, and for which honour I desire to express my grateful appreciation, my course is in great measure laid down for me by the injunctions of the illustrious Fellow of this College whom we meet to-day especially to commemorate. In the deed by which he conveyed to the College in 1656, a year before his death, his estate at Burmarsh in Kent, Harvey provided that: "There shall be once every year a general Feast for all the Fellows; and on the day when such Feast shall be kept some one person of the said College shall be from time to time appointed, ... who shall make an Oration in Latin publicly in the said College, wherein shall be a commemoration of all the benefactors of the said College by name, and what in particular they have done for the benefit of the said College with an exhortation to others to imitate those benefactors and to contribute their endeavours for the advancement of the Society according to the example of those benefactors; and with an exhortation to the Fellows and Members of the said College to search and study out the secrets of Nature by way of experiment, and also for the honour of the profession to continue in mutual love and affection amongst themselves without which neither the dignity of the College can be preserved nor yet particular men receive that benefit by their admission into this College which they might expect; ever remembering that concordiâ res parvae crescunt, discordiâ magnae dilabuntur." Herein may be read the whole duty of the Harveian orator and I might occupy my hour and your attention on this, the 247th anniversary, by a recapitulation of those who have materially benefited the College by their gifts and endowments, as well as of those who by precept and example have added to the lustre of our College and have benefited mankind by their pursuance of Harvey's exhortation "to search out the secrets of nature." Not a few of my predecessors in this honourable office have with much learning and in graceful diction fulfilled their task thus; as others have preferred to consider some aspect of Harvey's work in the light of more modern knowledge; or to show how fruitful have been the methods inculcated by Bacon, which Harvey was one of the first to apply, in extending the domain of science in those branches more closely associated with our own. Others, again, have pictured for us in eloquent phrase the times in which Harvey lived and have called up to our appreciation his companions and contemporaries and the influence they exerted on the thought and progress of his age. And in this brief survey of how the theme has been treated it would ill become me to omit a reference to the masterly oration of our learned Harveian librarian who sought to show in true light the relation of Harvey to his great predecessor Galen and how mistaken some of the notions concerning that relation have been. Further, too, he has pointed out that notwithstanding a large amount of very faulty anatomical knowledge that was considerably corrected by the seventeenth century, "Galen's sources of evidence respecting the motion of the heart were the same as Harvey's—viz., comparison of structure in a variety of animals, argument from the use of these structures, observation of the living heart, and numerous experiments on animals."[1]

I am not concerned, even were it needful, again to tell the oft-told tale of Harvey's great discovery and how he demonstrated the truth thereof, for that it was that rendered his epoch-making work the glory that it is; nor yet to defend his claims to the full merits of all he did against the pretensions of those who sought to belittle it or even boldly aimed to usurp what to him alone belonged. This has been done more than once and done completely. Nothing I could say could add one iota to the justification; to attempt it were almost to cast a doubt upon its truth. Briefly would I commemorate the good deeds and the munificence of our founders.

And first King Henry VIII. who by Charter in the tenth year of his reign (1518) incorporated this College, moved thereto in great measure by Cardinal Wolsey, but essentially at the instigation of one of his physicians—Thomas Linacre, whom on that account we revere as our special Founder and also our first President. It was he who provided the first home for the College in his own house in Knightrider-street, where the Fellows continued to meet for nearly a century (1614) and who also laid the foundations of our library. To him succeeded 30 years later in the office of President John Caius, whose name is perpetuated in that of a Cambridge College and who stands in especial honour in this our Fellowship as its munificent and enlightened benefactor. To him we are indebted for the institution of the College Annals, the earlier records of which he collected and wrote out in his own hand with an account in full detail of the College doings subsequent to his own election as a Fellow; and with scarce a break the proceedings of the College have been recorded by successive Registrars to our own days. From Caius also we received a revision of the statutes, and the silver caduceus the emblem of the President's office and carried by each one as such since Caius's time. Also William Gilbert, our President in 1600, who "opened the modern era by treating magnetism and electricity on a scientific basis,"[2] and whose fame has recently been commemorated by the formation of a Gilbert Society and the publication of a sumptuous translation of his great work—the work which induced Galileo to turn his mind to the subject. To the College Gilbert bequeathed "his whole library, globes, instruments, and cabinet of minerals."[3] Also Dr. Richard Caldwell, greatly distinguished, who, together with Lord Lumley, was the generous donor in 1582 of a rent charge upon certain lands to endow a Surgery lecture in the College—the Lumleian Lectureship—the fourth holder of which was Harvey himself, who in his very first course (1615) set forth his views on the circulation of the blood. Also Dr. Theodore Gulston celebrated for his theological no less than for his medical learning, who bequeathed by will in 1632 £200 to the College "to purchase a rent charge for the maintenance of an annual Lecture to be read within the College some time between Michaelmas and Easter by one of the four youngest Doctors in physic in the College." Also Sir Theodore Mayerne (1573–1654) who left us his library including many manuscripts. Also Sir W. Paddy, first time President in 1609 and again in 1618, who bequeathed £30 to the College in 1634. Also Dr. Baldwin Hamey, senior, who also left to the College a like sum after his death in 1640. Also Dr. Baldwin Hamey, junior, "the most munificent of all the benefactors of our College," as Dr. Munk describes him. In the troublous times of the civil wars when the building rented by the College in Amen-corner from the Chapter of St. Paul's was like to be sold to pay the exactions levied in the City of London, Dr. Hamey himself "became the purchaser of the house and garden and afterwards gave it in perpetuity to his colleagues," and who besides contributing liberally to the fund for rebuilding the College after the fire of 1666, also "at his own sole cost amounting to some hundreds of pounds wainscoted the cenaculum with fine Spanish oak with fluted pilasters ornamented with capitals, an elegantly carved cornice, and his coat of arms and crest immediately over the entrance." A portion of this wainscoting was removed from the old College building in Warwick-lane and now adorns the Censors' room adjoining. Further in imitation of Harvey he settled on the College the estate and manor of Ashlins in Essex, the proceeds from which were for the purpose, among other things, of doubling the premium to the Harveian orator and furnishing certain gratuities to the President, the remainder to be applied to the general purposes and advancement of the College. It is to Dr. Hamey's bequest that every Fellow present on the occasion of the election of our President owes the half crown in lieu of a pair of gloves which he then receives. Also Dr. George Ent who delivered the Anatomical Lecture in 1665 and who was knighted in the College by King Charles II., who had attended the discourse. Five years later he filled the Presidential chair. He was on terms of friendship with Harvey and it was through him that the Master's work on the Generation of Animals was published; a benefaction to science no less than to this College which also received from him a pecuniary bequest. Also Henry Marquis of Dorchester who was admitted a Fellow of this College in 1668 having three years previously presented the College with £100 to augment the library. Also Dr. William Croone who at his death in 1684 "left behind him a plan for two Lectureships which he had designed to found; one to be read before the College of Physicians with a sermon to be preached at the Church of St. Mary-le-Bow; the other to be delivered yearly before the Royal Society upon the nature and laws of muscular motion." His will, however, contained no provision for the endowment of these Lectures and the funds for the two Lectureships were subsequently provided by his widow who became Lady Sadleir. Also Dr. Richard Hale, who left us at his death in 1728 the sum of £450, which, with £50 given in his lifetime, was to be expended in the purchase of books. Also Dr. Richard Mead (1673–1754) to whom we are indebted for this bust of Harvey. Nor in this enumeration of our older benefactors is it fitting to omit him whom we to-day especially commemorate. Harvey at his own request added and furnished a library and museum to the building that the generosity of Dr. Hamey had provided for the College, most of which unfortunately was destroyed in the great fire. In July, 1656, at his last attendance at the College, within a year of his death, he "put the crowning act to his munificence by giving to

[1] Harvey and Galen. The Harveian Oration for 1896, by J. F. Payne, M.D.

[2] Dr. Larmor, F.R.S., Introductory Address, Section A., British Association for the Advancement of Science, 1900.

[3] For much of the information contained in this section the orator is indebted to the Roll of the College of Physicians by the late William Munk, M.D., F.R.C.P., Harveian Librarian.

the College in perpetuity his patrimonial estate at Burmarsh in Kent, then valued at £26 per annum." In his will also he thus further testified his affection for the College. "Touching my books and household stuffs, pictures and apparell of which I have not already disposed I give to the College of Physicians all my books and papers, and my best Persian long carpet, and my blue imbroyedyed cushion, one pair of brass irons, with fire shovell and tongues of brasse, for the ornament of the melting room I have erected for that purpose." He further directed Dr. Scarborough and Dr. Ent to select from his library and collections such as "they shall think fit to present to the College and the rest to be sold and with the money buy better."

Passing to the benefactors of more recent date it is my pleasing duty to mention Mrs. Bradshaw, who in 1875 bequeathed £1000 in Consols to found a Lecture to be delivered annually in memory of her husband, Dr. William Wood Bradshaw a Member of this College. A similar bequest was made to the Royal College of Surgeons. Dr. Gavin Milroy, a Fellow of this College, who in 1886 bequeathed a sum of £2000 to establish a yearly Lectureship in "State Medicine and Public Hygiene." Mrs. FitzPatrick, who in 1901 gave to the College under the advice of Dr. Norman Moore a sum of £200 to found a Lectureship in "The History of Medicine" in memory of her husband, Dr. Thomas FitzPatrick, a learned Member of the College. Also the following donors of sums for the purpose of providing commemorative prizes or medals to be awarded by the President and Council of the College. Dr. Swiney (1844), jointly with the Society of Arts, a triennial prize of a silver cup, value £100, for the best work on Jurisprudence. Dr. Baly (1866) £400 to provide a gold medal every alternate year for distinction in physiology, "In Memoriam Gulielmi Baly, M.D.," and not restricted to British subjects. A sum of over £400 subscribed in memory of Dr. Walter Moxon in 1896 the interest of which provides every third year a gold medal, value £50, for excellence in observation and research in clinical medicine and is not confined to Fellows or Members of the College. In 1895 Sir Hermann Weber generously presented to the College £2000 to found a prize, to be called the "Weber-Parkes prize," in memory of the late Dr. Edmund Parkes, to be awarded for the best essay on the pathology, prevention and treatment of Tuberculosis. And in 1896, due to the suggestion of our Fellow, Dr. Theodore Williams, a sum of £1000 was presented to the College by Captain Edward Wilmot Williams with the object of perpetuating the memory of the late Dr. Francis Bisset Hawkins, a former distinguished Fellow of the College. A gold medal is triennially awarded to a medical practitioner who has advanced sanitary science or public health.

Turning now to those whose achievements have enriched not only our College by their reflected lustre, but mankind at large by the benefit conferred and who by their intellectual labours and scientific results have gained for themselves imperishable fame, it would be wearisome and profitless to mention them merely by name. Time does not allow me to record their doings. Yet it were not decent that in the press and rush of the present day the labours of Gilbert and of Glisson, of Willis, of Young who enunciated the undulatory theory of Light, of Sydenham, of Heberden, of William Hunter, of Prout, Bright, Watson, Parkes, Jenner, Gull, Clark, and Reynolds, former Fellows of this College, should be forgotten on this occasion of the commemoration of our benefactors. Excepting such immortal discoveries as Harvey's, discoveries that mark an era and are starting points in knowledge, it is easy from our present standpoint to overlook the help that the advances made by these workers contributed to the general progress nor are those suggestions which proved to be erroneous altogether to be disregarded since in their refutation the right way often became manifest.

These are but some of those whose good deeds, whether in furthering the material prosperity of the College or adding to its reputation, deserve to be remembered as our benefactors. To commemorate, however, all such "by name, and what in particular they have done for the benefit of the College," as I am enjoined to do by Harvey, would be beyond my powers as I fear it would exceed your inclination to listen. But I should ill perform my duty in this connexion did I not "exhort others to imitate these benefactors and to contribute their endeavours for the advancement of the Society."

In attempting to comprehend the full significance of Harvey's great work on the circulation of the blood it must be recollected that he was first and foremost an anatomist, and that although his discovery and its proof were the result of observation of the actual movements of the heart and vessels and of experiments on the living animal it was by his previous knowledge of anatomy that he was enabled clearly to understand what he observed, and the perfection and, indeed, in great measure the feasibility of his experiments depended on his acquaintance with the structure of the organism he was investigating. And although the name of Harvey is for ever linked with a great and far-reaching physiological truth, one not only great in itself but if possible greater in being the starting point of physiology, and as such of a scientific pathology, it was from the anatomist's point of view that he came to enter upon the inquiry which was so fruitful in result. That a sound physiology is essentially dependent upon an accurate knowledge of anatomy was as well understood by Harvey as it is at the present day. "No one," said he, "indeed, has ever rightly ascertained the use or function of a part who has not examined its structure, situation, connexion by means of vessels, and other accidents in various animals and carefully weighed and considered all he has seen." It is further to be remembered that in the early part of the seventeenth century anatomy was a science that, at least so far as the human body was concerned, had reached a very considerable degree of advancement. The teaching of Galen, who first properly appreciated the importance of physiology, full of error as it was, that had held sway for 1400 years was giving way to the more accurate work of Vesalius. His book, "Fabrica Humani Corporis," published in 1543, and his teaching at Padua marked the beginning of a new era in biological science furnishing the account of the structure of the body as a basis upon which a precise physiology was alone possible and from which a rational pathology and medicine could alone develop. The true course being thus entered upon the work was continued by the contemporaries, pupils, and successors of Vesalius, chief amongst whom were Servetus, Realdus Columbus, Fallopius, Cæsalpinus, and Fabricius, the last named being professor at Padua, whose instruction Harvey himself followed for nearly four years after quitting Cambridge in 1598. There, whilst perfecting himself in anatomy, he became more fully acquainted with such views as were held upon the circulation, modifications for the most part of the Galenic doctrine, with such objections thereto and glimpses of the truth as had been foreshadowed by Vesalius and still more even by Servetus who seems at least to have had some idea of the real nature of the pulmonary circulation.

For the first few years after his return to London Harvey appeared to have pursued his anatomical work and especially the dissection of animals. Becoming a Fellow of this College in 1607 and in the next year a physician to St. Bartholomew's Hospital he was in 1615 appointed Lumleian lecturer, the fourth holder of the office. The subject of the lectures was surgery supplemented by public dissections so arranged as to form series of courses extending over six years. But it was as an anatomist that Harvey evidently regarded himself, for in the dedication of his work "De Motu Cordis et Sanguinis" in 1628 "to his very dear friend, Dr. Argent, the excellent and accomplished President of the Royal College of Physicians, and to other learned physicians, his most esteemed colleagues" he concludes thus, "Farewell, most worthy doctors, and think kindly of your anatomist, William Harvey." In the course of the introduction to the same work the author appeals to the similarity of structure of the two ventricles as being in favour of their pursuing a similar function which was contrary to prevailing ideas. And lastly, the final chapter of his "anatomical disquisition" shows how "the motion and circulation of the bloood are confirmed from the particulars apparent in the structure of the heart and from those things which dissection unfolds." "Harvey's method of inquiry was that which may be called the purely and strictly physiological method. Observing carefully the phenomena of the living body he sought in the first place, in the arrangements of the structures concerned in the facts of anatomy, for suggestions as to how the phenomena might be explained. It is this aspect of his method which brings into striking light the value of the work of Vesalius and of the school of Vesalius as the necessary preparation for Harvey's labours. Vesalius opened up the way for physiological inquiry by his exact anatomical labours ..... and his successors did little more than widen the way which he had opened up. Harvey was the first who followed up the anatomical path till it led to a great physiological truth. ..... He made no appeal to any knowledge or to any conceptions outside the facts of anatomy and the results of experiments. ..... The patient examination of anatomical features, if possible a comparison of those features in the same organ or part in more animals than one, the laying hold of some explanation of the purpose of those features suggested by the features themselves, and the devising of experiments by vivisection or otherwise which should test the validity of that explanation, that was Harvey's threefold method."[4]

I propose to consider how far the ascertainment of the facts of structure as a necessary preliminary or adjunct to experimental methods has influenced the progress of biological knowledge and what may be the limitations and

[4] Lectures on the History of Physiology during the Sixteenth, Seventeenth, and Eighteenth Centuries, by Sir M. Foster, K.C.B., M.D., D.C.L., secretary to the Royal Society. 1901.

extensions of the subject in that direction. But I would guard myself at the same time from being supposed to assume that anatomy, however complete and precise, is of itself sufficient to furnish a physiology or knowledge of function, since in the earlier days to which I have referred when the facts of gross anatomy were well and widely known most erroneous and grotesque views were held as to the action and uses of the various organs—as, indeed, the history of the explanations offered for the circulation of the blood before Harvey's time sufficiently testifies. Nor do I fail to admit that much physiology more especially in recent times, has become known even with considerable approach to exactness without a corresponding knowledge of its structural basis. The discovery and proof of the circulation, not only by the actual positive knowledge which it furnished, but also by the methods by which it was arrived at, did much to dispel the fanciful and absurd views held as to the other functions of the body and thus became the starting point of modern physiology. But, as I propose to show by a few examples, the full benefit of Harvey's work, and indeed its applicability in explaining those other functions, was proportional to the extent of the accurate information possessed in respect to the structure of the organs by which these processes are carried out, and as fresh anatomical knowledge was forthcoming so did truer conceptions of the living activities develop from their observation and experimental investigation.

The rational study of the *respiratory function*, for example, followed much the same course as did that of the circulation of the blood. The Galenic doctrine on this subject was that which Fabricius propounded in the lectures to which Harvey listened. The air which was introduced into the lung by the "rough artery"—or, as we call it, trachea—was for the purpose of modifying and regulating the innate heat of the heart, of getting rid of the fuliginous vapours which resulted from this innate heat, and further with the object of being conveyed by the "vein-like artery" (pulmonary vein) to the left side of the heart, there to generate those vital spirits which the arteries carried throughout the body. Although Harvey's discovery set aside at once and for ever such unintelligible nonsense, as it had upset the corresponding views of the heart's action, the time was not yet quite ripe for laying the foundation of sounder principles as to the function of respiration. The state of knowledge of the anatomy of the lungs was scarcely as far developed in Harvey's time as was that of the structure of the heart, as may be seen in the "Mannuall of the Anatomy or Dissection of the Body of Man" (enlarged 1642), by Alexander Read, who was a Fellow of this College as well as "Brother of the Worshipfull Company of the Barber Chirurgions."

Moreover, the significance of the movements of the chest in breathing and of their relation to the entrance and exit of the air from the lungs was but imperfectly realised. If to Borelli may be attributed the first settlement of these questions on right lines, applying as he did to the problem the growing mechanical and chemical knowledge of his day, and showing as he did that the air entered the lungs as a result of atmospheric pressure as the chest enlarged by muscular contraction, and further that the air inspired was actually taken up by the blood and that this was essential to the life of an animal, all of which are the facts which are at the basis of our present knowledge of the subject,—if, as I say, Borelli showed this, the way for his so doing was made clear for him by what had been done in explaining the true structure of muscular tissues and still more by the labours of his fellow professor at Pisa, Malpighi. More than 50 years after the invention of the compound microscope this observer applied it to the investigation of the tissues and had himself informed Borelli of the minute structure of the lungs, how the terminal branches of the air tubes ended in closed vesicles on the walls of which the smallest blood-vessels ramified, forming the communication between the arteries and veins, and thus supplying the completing link to Harvey's work within a few years after our great countryman's death. On such a foundation of exact knowledge the further pursuance of the subject was one for the physicist and chemist and by them it has been brought to a high pitch, when once the nature of the machine they had to deal with was clearly defined. Observation and experiment were profitably occupied when anatomy had cleared the ground.

It was not only with the functions of respiration that Malpighi's great work on the investigation of tissue structure was concerned. His labours, added to and developed by the famous Dutchmen van Leeuenhoek and Swammerdam as well as by the Englishman Robert Hooke, rendered possible the satisfactory examination of the other functions, though the difficulties of the necessary observation and experiment were greater than they were in respect to the circulation and respiration. Connected with the latter, questions of a mechanical and chemical character arose more capable of being answered as the sciences of physics and chemistry were at the time being better understood. While it was comparatively easy to see the movements of the heart and of the lungs in a living animal when these organs were exposed, vivisection did not render so clear the secretory activities of the glands, the changes brought about by digestion, the intricacies of tissue nutrition, and the workings of the nervous system. These physiological problems were more intimately connected with the living material and were not so open to such observation or experimental inquiry as was then possible. And it may be said that less even was known of the structure of the organs concerned in these functions than there was of the circulatory and respiratory systems. But Malpighi and his fellows showed the way to what was wanted, and as will appear the uses and workings of the structures became open to scientific inquiry with important consequences.

Mention must be made, however, in further illustration of my theme of what had been done to provide truer conceptions of the nature of *muscular action*. Up to the time of Vesalius, and even for some time afterwards, the contractile power of the muscles was regarded as resident in the connective tissue sheath of the fibres, the true muscle substances being looked upon as packing. Vesalius first indicated the proper rôle of this material, but it was not until more than a century later, in 1664, that Nicolas Stensen, a Dane, described (1664-67) the structure of muscular tissue as he had studied it with the microscope, and thus furnished Borelli with the anatomical grounds upon which he formulated the principles of the action of this substance, also showing that the contractions were induced through the nerves. Although much that he taught was erroneous, being entirely dominated by mechanical conceptions of the nature of muscular contractility, the refutation of his errors showed the right lines, which was possible only on the structural basis which the microscope had supplied. The most important step towards an understanding of the nature of muscular action was taken shortly afterwards by a Fellow of this College, Francis Glisson, whose name is more generally associated with his work on the liver and on rickets. In a treatise, however, published by him in 1673, "De Natura Substantiæ Energetica," he first explained the property of muscle substance which he called irritability, the character and phenomena of which were further developed by Haller nearly a century later.

Important as was the work that Malpighi did in respect to the discovery of the capillary blood-vessels and the structure of the lungs, almost if not quite as great was that which he accomplished in connexion with the *secreting glands*. In earlier times the word "gland" had a wider range of meaning and included such organs as the brain and tongue. That some of them were concerned in straining off certain serosities or humours from the blood was also generally held, but the active agents in the process were quite unknown, as would naturally be the case when the intimate structure of the organs was hidden from view. To the nerves this function was often attributed, but the physiology of secretion was on a par with that of the heart or the lungs, with which, of course, it was interwoven. Within a few years previous to the time that Malpighi was investigating the structure of the skin, the liver, and the kidneys, the ducts of the pancreas and of the submaxillary and parotid glands were discovered and the position of these organs as secreting glands recognised. Malpighi, in addition, showed the lobular structure of the liver and the relation of the acini to the blood-vessels, and showed the general course and arrangements of the renal tubules and of the glomeruli and capsules which were named after him. The instruments at his disposal did not permit him to realise the cellular constituents of these several organs, but all these researches gave the death-blow to the older conceptions as to the part played by the nerves in the secretory processes, and it was realised that the secretions were derived from the blood in its passage through the glands and were passed into the commencements of the ducts. Stensen, indeed, who had discovered the submaxillary duct, seems to have had a foreshadowing of the vaso-motor influence on secretion.

The subject of *digestion* need not detain me; the problems with which it is concerned are so essentially chemical in nature that although in the latter part of Harvey's period and within a few years after the existence of the digestive juices as secretions of the various glands was known, their composition and mode of action on the foodstuffs were not a matter of anatomical inquiry and depended for their satisfactory investigation upon a knowledge of chemistry that was developed altogether outside the study of the living body.

Of all the functions of the body none, it would be at once admitted, is more difficult of study or more obscure in the investigation than that of the *nervous system*. None also has been the subject of cruder description or wilder explanations. That this is so would seem natural, clearly associated as nervous phenomena are with the more recondite phenomena of life and subject as their study has ever been to the influences of metaphysical speculation. At the same time, however, one, and as I conceive the most important, circumstance that has retarded the rational development of neurology has been the extreme difficulty that has existed in obtaining a precise knowledge of the actual structure of the organs which subserve the function. Even at the present day, great as are the advances that have been made, I think I should be correct in saying that less is known of the minute anatomy of the nervous centres than of any other organs in the body. Whilst it may be said that with the present means at our command a knowledge of the histology of many of the tissues has reached or almost reached its limits, the precise disposition of the multiplicity of nerves and cells that constitute the brain and spinal cord as well as the ultimate termination of the nerve fibrils in the tissues and in the centres are yet to seek. Hence it is that whilst during the period of Harvey and immediately subsequently the study of the several functions to which I have referred began to emerge from the erroneous and fanciful notions by which they were surrounded and their investigation to be started upon lines that have been followed to the present day, the phenomena of the nervous system for some time remained enveloped in the mystic obscurity that had enshrouded them with growing intensity from the earliest times, an obscurity that was if possible made greater by the lengthy and unintelligible phrases in which they were described.

The main divisions of the brain were recognised—cerebrum and cerebellum, medulla, corpus callosum, corpora striata, ventricles, and even such smaller parts as the corpora geniculata, pituitary body, pineal gland, infundibulum, and septum lucidum. The distinction into white and grey matter was also appreciated, and that the former was made up of fibres was supposed. But the structural relation of the several parts to one another was very indistinctly realised, and anything further as to minute structure was, of course, unknown. The following extract from Read's Mannuall of Anatomy, already mentioned, will serve to show what was taught in a standard text-book, as we should now call it, concerning the functions of the brain.

> Of the action of the brain. The action of the brain is this: After that the spirits and blood are discharged into the Sinus of the dura mater by the veines and arteries to temper the heat of them the brain is ordained (seeing it is colder than the heart) that the animall functions, which are feeling and moving may be the more readily executed. Wherefore the animall spirits seem not to differ from the vitall spirits in substance, but in qualities; viz. the temperament and attenuation; for they must be more temperate because heat doth both taint the reasons (as we may see in drunkennesse and raving) and hindereth or preventeth the motion. The spirits ought also to be more subtile because they are to passe like a thunder through the bodies of the nerves. So, as the vitall spirits are carried to the parts of the bodies by the arteries, so the animall are carried by the nerves. The animall spirits for this cause also ought to be subtill because the reasonable soule is resident in the brain, which doth contemplate things immateriall, as angels and it selfe.

Although this may be taken as illustrating the teaching of the day, and the work of Willis "De Cerebri Anatome" (1659) was no advance thereon, there appeared ten years later (1669) a treatise on the anatomy of the brain by Nicolas Stensen, whose investigations on secretions have already been referred to, which foreshadowed in several respects many of the discoveries made and views held a century and more later. But the special feature of this treatise as bearing on my present subject is that after pointing out the extremely slight information possessed as to the essential structures of the nervous system Stensen refused to admit, in face of the lack of all sound anatomical knowledge, any physiological deductions whatever. After pointing out a number of cases in which he shows that adequate anatomical knowledge is wanting he says, "Whence you may guess how little trust is to be put in explanations based on such a futile foundation." "I have said nothing of the use of parts, nothing of the actions which we call animal, since it is impossible to explain the movements carried out by a machine so long as we remain ignorant of the structure of its parts."[5] It was only very gradually that this ignorance was cleared up, and pending that the progress of neurology was hindered by the mystical speculations of successive metaphysical doctrines. Until the discovery of the nerve cells and their connexion with the fibres was made in the fourth decade of the last century no very sound notions on nervous function were possible.

Slowly and with many throw-backs as physiology emerged from obscurity and became established on a scientific basis the correlative subject of pathology long lagged behind in taking up a similar position. The reluctance, as it were, to regard morbid processes in the same manner as those manifested by a healthy organism was no doubt in part responsible for the delay in establishing any clear conceptions as to the nature of disease, but what was of far greater influence was the lack of any systematic observations on the appearances presented after death, anything that, in short, might be looked upon as a knowledge of morbid anatomy. Hence it was that the notions respecting disease and its working were, if possible, more fanciful than those held in connexion with the healthy body and were retained for long after the latter had been diverted on to right lines. Although isolated records of post-mortem examinations were made from time to time[6] it was not until the latter half of the eighteenth century that Morgagni laid the foundations of a scientific pathology by his work "De Sedibus et Causis Morborum" (1780) upon which a goodly superstructure was soon erected. "It stands most clearly revealed," says Virchow,[7] "in the history of pathology that the division of the body first into the larger regions (head, breast, abdomen, &c.), then into organs, then into tissues, and finally into cells and cell territories, was the first step which opened up to us the comprehension of disease." There is good ground for thinking that this comprehension would have been sooner grasped if the collection of records of post-mortem inspections which Harvey had made over many years had escaped the destruction which befell many of his papers when his house in London was ransacked during his absence at Oxford with King Charles.

From this necessarily brief sketch of the development of physiology in relation to gross anatomy it is apparent that any approach to an accurate understanding of the working of the several functions was only possible when the facts of structure were ascertained and appreciated and that when these facts were scanty fanciful and erroneous views were entertained as to the mode in which the corresponding functions were performed. With the prosecution of anatomical investigation beyond the range of the unaided vision the knowledge of the living organism and its working was by so much extended. The impetus given to the study of microscopic structure by the labours of Malpighi and his followers resulted in establishing histology—a term first used by Carl Mayer in 1820—as a specific branch of anatomical inquiry which has been pursued with ever-growing success to the present day, coincidently as the realm of gross anatomy became more and more restricted, so far as the human organism is concerned, by the very completeness of the knowledge of it. Did time permit it would not be difficult to show, as indeed has in part already been done, that as the intimate structure of the tissues became revealed, so was the way cleared for a sounder physiology whether by a more rational understanding of what observation and experiment had disclosed or by indicating the direction in which observation and experiment might be fruitfully continued.[8]

The progress of histological research has been marked by

[5] Foster: loc. cit., p. 280.

[6] Bonetus in 1675 had collected from previous writers many such in his "Sepulchretum."

[7] Huxley Lecture, delivered at Charing Cross Hospital on Oct. 3rd, 1898.

[8] In the record of histological advance mention must be made of Haller's "Elementa Physiologiæ" (1757), which first presented in a collected form the most correct information on the structure of the tissues, and of Bichat's "Anatomie Generale" (1801), a still more comprehensive work on the same lines in which also the foreshadowing of the cellular nature of the tissues, established by Schwann in 1838, was faintly indicated, although the word "cell" was not used. To the labours of John Goodsir, and still more to the epoch-making work of Virchow on Cellular Pathology (1858), must be ascribed the demonstration of the fact that our conceptions of morbid processes must be founded on a histological basis—a doctrine that the great pathologist's "Archiv für Pathologische Anatomie und Physiologie und für Klinische Medizin" has for nearly half a century constantly expounded.

one great feature—far-reaching in its effects and of fundamental importance—the recognition of the cell as the tissue unit. And whilst this has served to give completeness to the views of tissue structure and especially of the genetic relations of the several components of the organs, it served as a fresh starting point for the investigation of biological problems, since it was recognised that the life of the organism was but the life of the cell, differing only in degree of completeness; and the full realisation of what is meant by specialisation of function being dependent on differentiation of structure became apparent. With entire appreciation of the complexity of the phenomena presented by the living cell, Brücke 40 years ago affirmed that this must imply the existence of some structural arrangement in the cell substance, some degree of organisation, some further stage than had hitherto been detected in the disposition of the material which subserves function. Setting aside the obvious distinction into cell contents nucleus and attraction sphere, and the separation of the first into cell protoplasm and the metabolic products thereof (such as starch, fat, glycogen, and pigment granules), attention has been directed towards discovering in the apparently homogeneous protoplasm some evidence of structure. Numerous observers long ago described a fibrillar arrangement in this material, a view that later gave place to the assertion that it is rather to be regarded as of a reticular nature, the protoplasm forming a network or meshwork "the nodal points of which appear as individual granules."[9] The imperfect loculi formed by this disposition of fibrils were described as being occupied by a more fluid material. Objections were raised to this explanation and the more recent description with which the name of Bütschli is associated attributes to the protoplasm a "foam-structure, which depends upon the presence within a uniform ground mass of a large number of extremely fine vacuoles lying almost at the limit of microscopic visibility, and so close together that their walls consist of relatively thin lamellæ" (Verworn). But these and several other views as to the intimate structure of the living cell protoplasm which describe it "as being composed of two substances, one of which is disposed as a contractile net according to some, as a relatively rigid framework according to others, or as free filaments; or whether it be built up of a more solid material and of a more fluid material which occupies the minute spaces or vacuoles which are hollowed out in the former,"[10] have not met with universal acceptance and there are still those who regard these relatively coarse indications of structure in cells as the results of post-mortem change or of fixing reagents. To such the living protoplasm is a homogeneous colloid and its "peculiar and transcendental qualities are associated with molecular rather than with molar structure." What is said as to the cell contents applies also to the nucleus in which a reticular or meshwork appearance is described by some, as others would regard the actual living condition as one of perfect homogeneity.

In this uncertain state the question of the intimate structure of the living cell protoplasm must at present be left, so far as the same is capable of investigation by the microscope and its accessories. But whilst fully recognising that with further improvments in method and in means this problem will be solved, it none the less seems certain, consistently with the present hypotheses as to the nature of the cosmos, that however far the eye may be able to penetrate there will still remain behind and beyond a molecular or atomic structure for the understanding of which other branches of scientific inquiry must be employed. "The organism," says Virchow, "is not an individual but a social mechanism. An exact anatomical analysis of this mechanism always brings us at last to cells; they are the ultimate constituents of all tissues as they were their origins. Hence we call them the living elements and hence we regard them as the anatomical basis of all biological analysis, whether it has a physiological or a pathological object in view. The cells are composed of organic chemical substances which are not themselves alive but the mechanical arrangement of which determines the direction and power of their activity."[11]

Before proceeding to consider the next and chemical stage of structure it would be well shortly to indicate some of the living phenomena which have either already received or still await their explanation in the intimate histology of the cell. Most important of these is contractility, whether this be manifested as irregular amœboid movements, the rhythmic wavings of cilia, or the orderly and more highly differentiated contraction of muscular tissue. The ebb and flow of the more diffluent portions into and out of the reticulum of the spongio-plasm—the "streaming," as it has been termed—is a step towards explaining—apart altogether from the attempt to express protoplasmic movement in terms of inorganic phenomena, such as has been done—those alternate contractions and expansions of the bioplasm due to reciprocal rearrangements of its particles which constitute one of the most striking characteristics of the living organism. The complicated changes connected with nuclear division known as "mitosis," which underlie all cell multiplication and hence are of such importance in growth and development, are only realised as the result of those microscopic investigations which have been directed towards discovering a structural organisation of the cell itself. The germ-plasm and the problems of heredity connected therewith can only be discussed in terms of cell structure with any probability of satisfactory results. Possibly also the varied morphological characters presented by the fully developed living constituents of the tissues, developed as they have been through successive stages from cells of almost identical appearance in the blastoderm, may be more fully understood when the structure of their protoplasm is more accurately known. The so-called specificity of cells and its limitations—metaplastic interchanges—so important in the study of tumour formation is an aspect of this same question.

From the earliest recorded times there has prevailed an idea which ascribed to matter an ultimate composition of indivisible indestructible particles or atoms and by no one was the atomic theory more firmly maintained than by the contemporary of the later years of Harvey—Isaac Newton. "To me," said he, "it seems probable that God in the beginning formed matter in the solid, massy, hard, impenetrable particles of such sizes and figures and with such other properties and in such proportion as most conduced to the end for which He formed them." By Robert Boyle also, to whom natural philosophy in the seventeenth century owed much, the theory was held, though he found the explanation of chemical changes in the differences of atomic structure and arrangement of one single form of matter rather than of different elements—a crude foreshadowing of the present-day conception by Sir William Crookes of the fundamental matter or "protyle." As is well known, however, it was not until the early years of the last century that the atomic theory received its practical development by John Dalton, since when it has remained at the foundation of physical and chemical science. "Despite attacks and criticisms," says Professor Clarke in his recent Wilde Lecture,[12] "Dalton's generalisation still holds the field and from it, as from a parent stem, spring nearly all the other accepted theories of chemistry." The conception of an atom as the smallest conceivable portion into which an element can be divided or that can enter into combination, and attaching to the idea of the atom a definite relative weight constant for atoms of the same element but differing with different elements, gave a satisfactory explanation for the laws of definite proportions and of multiple proportions which previously had been but incompletely recognised.

Since, with the exception of a few elementary gases, an atom is always combined with one or more atoms of the same or of other elements, some term is required to denote the smallest portion of the substance capable of a separate existence and for this the word "molecule" is employed. Built up on these fundamental ideas there has developed among other great generalisations the chemistry of the carbon compounds and the hypothetical recognition of the relative arrangements of the atoms within the molecule—in short, chemical constitution or chemical structure. Now "the greater the valency of an element the more complicated are its combining ratios and the greater the possibility of its atoms forming numerous compounds with similar and dissimilar atoms." The atoms of carbon, which is the chief element in so-called organic bodies, "possess, in a much greater degree than those of any other element, the property of combining with similar atoms whereby a part of their valencies are satisfied."[13] Thus may be formed groups

[9] General Physiology, by Professor Max Verworn. Translated by F. S. Lee, Ph.D. 1899.

[10] The Structure of Cell Protoplasm, by W. B. Hardy. Journal of Physiology, 1899, vol. xxiv., p. 159.

[11] Huxley Lecture.

[12] Delivered on May 19th, 1903, to the Manchester Literary and Philosophical Society on the occasion of the Dalton centenary celebrations.

[13] Principles of General Organic Chemistry, Professor Iljelt, 1899.

of carbon atoms so linked together that their valencies are in part satisfied among themselves, constituting what are known as carbon nuclei, and the free valencies being satisfied by atoms of other elements molecules are formed in which much energy is accumulated with more or less instability. Such conceptions as to the fundamental nature of matter, of its molecular structure and arrangement of atoms therein, permitted the laying down of rational or structural formulæ for chemical compounds, and when the further suggestion was made of linking the atoms in tridimensional space rather than in a single plane a still further extension of the idea of the atomic disposition within the molecule became possible and "stereo-chemistry was born" (Clarke). With theories of this kind ready at hand—theories which had done and are still doing so much to explain the phenomena met with in the domains of physics and chemistry—what more natural than that the biologist, recognising that but little progress was being made in the further investigation of the intimate cell structure and that the histologist in point of fact was apparently at the limit of his range of observation, should turn to the physico-chemical sciences for the satisfaction of his quest?

The attempts, however, from the chemical side to explain the constitution of living matter, due no doubt to the extreme complexity of the subject, cannot be said as yet to have led to any very definite result, although several very suggestive hypotheses have been put forward. Inasmuch as no empirical formula has up to the present been constructed for any one of the typical proteids, a rational or structural formula for the constitution of the undoubtedly large molecules of which these substances are composed is scarcely to be expected, and this, although necessary, is but only the first stage in the inquiry. Analysis of proteid bodies gives rise to numerous products; the end substances, such as carbonic acid, water, and urea, we are familiar with, but the intermediate ones "fall into two principal groups, the fatty compounds (generally containing an amidogen radicle) and the aromatic compounds or derivatives of benzene."[14] Accurate as further work in this direction may become, however, it still of necessity will not be a satisfactory explanation of the composition of living protoplasm which is ever in a state of flux, the continuous decompositions and reconstructions of which underlie its activities—are indeed phases of its living. Hitherto all attempts to ascertain the composition of the bioplasm have resulted in killing the material and hence the solution of the question is evaded. And although proteids are obtained from living protoplasm there is no proof that they exist as such in the living matter but rather are they the dead derivatives of what is killed in the process of examination.

Theories of the constitution of proteids arrived at by the attempted synthesis of these substances have been provisionally set out, and though no one of them is free from objection it may reasonably be supposed that, consistent with prevailing chemical theories, they are on the right lines. Among these should be mentioned that propounded by our distinguished Fellow, Dr. P. W. Latham, according to which, what he terms "living proteid" is composed of a chain of cyan-alcohols and a thio-alcohol united to a benzene nucleus. These cyan-alcohols are exceedingly unstable and prone to undergo intramolecular changes, properties also possessed in a marked degree by bioplasm, and similar bodies are obtained from the disintegration of both cyan-alcohols and proteids. A more recent attempt in the same direction has been made by Verworn,[15] who describes the "biogens," as he terms them, as real chemical and physical entities, each consisting of a benzene nucleus round which are arranged various groups of atoms, the idea being arrived at by a study of the metabolic products of the organism. The extreme lability of the biogen Verworn attributes to the incorporation of oxygen in the molecule, the absence of which, rather than the accumulation of waste products, he regards as responsible for the cessation of the irritability of the bioplasm. It may be further observed that it is in the cell protoplasm and not in the nucleus that this observer locates the biogens.

Whilst fully realising the purely speculative character of these conceptions the provisional use that they may be in comprehending the activities of the living organism is apparent. For many of these complex processes the knowledge of the chemical anatomy of bioplasm is as essential as the gross anatomy of the organs concerned is for an understanding of the circulation of the blood. As the chemist and the physicist find in the atomic theory and its developments an explanation of the properties or functions of the non-living bodies with which they deal, so may the physiologist find in the same assumptions a clue to those even more abstruse functions displayed by living materials and furnish to the pathologist and to the clinical physician those data upon which a fuller realisation of morbid processes may be obtained and sounder principles for their prevention or their treatment be laid down.

Where in the whole range of physiological inquiry is to be found a region into which the observer has less penetrated and where for want of some guidance he is more adrift in the comprehension of what he does recognise than in the complicated region of "nutrition"? And yet how essential for the mere framing of a proper dietary or for an understanding of the protean symptoms collectively denominated "gout" is it that we should be able to form some idea of what becomes of the absorbed foodstuffs, when having undergone some elaboration in the epithelial cells, the hepatic tissues, and the blood through which they have passed they come "within the sphere of influence" of the living cell. What, too, is more important than to be able to attach to the comprehensive term "metabolism" some rational meaning, based upon a knowledge of what actually occurs and what structural arrangements and rearrangements take place within the bioplasm of the tissues? The practical importance of this must be obvious and should prevent the relegation of such questions as I have been discussing as transcendental and of no useful purpose.

One of the greatest and most far-reaching advances in pathology within recent years is undoubtedly the recognition of the part played by micro-organisms in the causation of disease. But the full value of the knowledge gained is not comprised in the detection and cultivation of the specific bacillus, nor yet even in the discovery of the particular toxin which the microbe produces, important as such information is. We require to know how and why these poisons affect the tissues as they do and in order to arrive at that the rational formulæ of these poisons must be known and, what is more, the molecular structure of the living cells upon which the noxious material acts ere we can realise how by some untoward substitution in the atomic arrangement of the living molecule its activities are prejudicially affected. Our treatment of disease by drugs has been forcibly if irreverently described as "pouring substances of which we know little into bodies of which we know less." Pharmacology has done a little towards removing this reproach and that department of it which deals with the relation between the chemical composition and constitution of a substance and its physiological action no doubt lies at the root of all rational drug therapeutics. But no one can assert that so far very much is known in this direction or that there has been much practical outcome of the investigations. This would be quite otherwise, however, if we had a knowledge of the molecular structure of living matter which would show the perversions taking place in disease and indicate the way in which they could be corrected.

The subject of immunity may reasonably be expected to find its interpretation in the ultimate constitution of the tissue elements, as also those at present vague conditions which we are dimly conscious of, represented by such terms as "bodily constitution" and "temperament." So, too, the differences in response on the part of different individuals to the same morbific influence, the variations in the manifestation of what we speak of as the same disease in various persons that lead the sagacious physician to treat the patient and not the malady, and, in brief, those intangible characters which determine the responsibility of the organism for morbid symptoms as distinct from the injurious agent that we speak of as cause—each and all await their explanation. The factors of the environment which condition the vitality of the tissues are not to be found solely in such external conditions as are commonly comprised in that expression.[16]

[14] Professor Halliburton, M.D., F.R.S., in Professor Schäfer's Text-book of Physiology, vol. i., p. 35.

[15] Die Biogen-hypothese. 1903. See also Nature, Feb. 26th, 1903.

[16] As illustrating these environmental relationships may be mentioned the various forms of taxis or tropism whereby the direction of the movements exhibited by living protoplasm may be influenced. The best known of these is "chemiotaxis" as met with in connexion with some states of leucocytosis, but it is probable that other forms of taxis caused by pressure, gravity, heat, and light also prevail. "The spermatozoon seeks the ovum, and almost everywhere in the living world is led in the right path by the chemiotactic action which the metabolic products of the egg cell exert upon the freely moving sperm cell. ..... Every species of spermatozoon is chemiotactic to the specific substances that characterise the ovum of the corresponding species"

The behaviour of cell to cell, their mutual interactions—cytotaxis—and their physiological resistances the one to another will have to be taken into account in forming any thorough conception of the totality of life, whether healthy or diseased, that an organism presents, and the understanding of such problems cannot be attained until the finite structure of the material concerned be rendered plain or be assumed with such justification as those concepts underlying physico-chemical action at present furnish.[17] May it not also be in this same molecular structure of living matter that will be found the explanation of those phenomena of development and of organic evolution by which the fertilised ovum of two different kinds placed under identical conditions will each attain "to such form and structure as best fit it for its place in nature—processes which cannot be measured or observed by the same methods as are used in the investigation of the phenomena of non-living nature—i.e., by measurements of their time and place relations under varying conditions—in other words, by the method of experiment"[18] which are applicable to other processes of living organisms? "The biogen hypothesis gives a plausible account of growth and the production of fresh living material by supposing that the molecule is capable of polymerisation [i e, the union of a number of molecules to form a single molecule] and then of falling into simpler substances once more."[19] Surely I need not plead for the importance of these questions I have set out, an importance that is not merely the concern of the biologist but is that of the practical physician. In the solution of these problems lies widespread benefit to mankind.

Yet, one step further. The atomic theory of the constitution of matter and its developments, although they have hitherto sufficed for the needs of the chemist who concerns himself with the decompositions and reconstructions of substances, is not the last word for some, at least, of the most progressive physicists. Is the atom indivisible and finite? has ever been a question that even the most pronounced atomists have asked themselves from time to time, and if the explanation of the recent discoveries that have been made in connexion with radio-activity be correct the answer must be in the negative. Briefly to summarise from this year's Romanes lecture by Sir Oliver Lodge, the most advanced views that physicists are inclined to hold, it may be said that the atom is conceived as consisting of an aggregate of what have been termed corpuscles and further that each atom may have associated with it a definite charge of electricity, atoms of different kinds having multiples of this charge, such an electrically charged atom being termed an "ion." Now the smallest unit of electric charge which itself "possesses the most fundamental and characteristic property of matter—viz., mass or inertia"—is known as an "electron" and the charge with which the atom is possessed consists of a number of these electrons. Within the atom the "electrons are in a state of vigorous motion among themselves." But it has been found that the electrons can be detached from the atom at an electrode and such isolated particles form the cathode rays which when stopped suddenly by a massive obstacle give rise to the so-called Roentgen rays. Hence the electron "is the most definite and fundamental and simple unit which we know of in nature." Whether, however, the electron is to be considered as solely consisting of electrical charge or whether this be associated with a material particle is a moot point. Some hold that the latter is non-existent and that in place of there being two kinds of inertia, which we speak of as material and electrical, the latter alone exists, the atom therefore being "composed solely of electricity." Such a concept of the electrical nature of matter is obviously a more precise expression of the monistic theory, in accord with which matter and energy are but convertible terms. Such a hypothesis suggests also that the various elements as we know them are but "different groupings of one fundamental constituent," the atom of each one consisting of its own special number of electrons, the unity of matter being thus arrived at. Highly speculative as such considerations are they nevertheless find support in electrical phenomena and still further in radio-activity of which we have heard so much in connexion with radium and allied substances. This radio-activity "consists in the flinging away with great violence of actual atoms" which exceed in their rate of movement the fastest cannon-ball ever projected. The substance left is also radio-active and successive residues, differing as they do from each other, yet continue to exhibit radio-activity, "and one of the residues so left seems ultimately to pitch away electrons simply instead of atoms of matter"—a veritable transmutation of matter. Thus it is supposed that "the massive and extremely complex atoms of a radio-active substance are liable to get into an unstable condition ..... and gradually disintegrating fall into other and ultimately more stable forms of matter." Yet it appears that as the radio-active substance thus breaks up fresh radio-active matter is as constantly regenerated, possibly, as Lord Kelvin has suggested, from the ethereal waves surrounding the atoms. Even as the atomic and molecular theory was laid hold of to furnish an explanation of the flux of chemical activity which we denominate bioplasm, so have these further speculations on ionic action been pressed into the same service and with some promise, wholly hypothetical as they may be. It is to Professor Loeb of Chicago that we in the main owe the application of the ionic theory to physiological phenomena. "The bulk of protoplasm," he writes,[20] "consists of colloidal material, and the physical manifestations of life, such as muscular contraction, protoplasmic motions, and the innervations, are due to changes of the condition of these colloidal solutions. And the reason why the electrical current is the universal form of stimulation is that the particles in colloidal solutions are electrically charged and that every alteration of the charge of the particles will result in a process of innervation or a contraction or a protoplasmic motion." Thus nerve action is simply electrical action, negative ions being released where nerve blends with muscle, or where systems of concatenated neurons come into connexion. Ion after ion is precipitated and thus neural conduction takes place.[21] This play of ions is excited or inhibited by the character of the fluids with which the protoplasm is bathed—by the nature, that is, of the ions which these fluids contain. Most effective in stimulating protoplasmic action are such substances as sodium salts, as those of lime restrain it, and since such inorganic bodies are among the products of tissue waste it may be that in the ions of metabolism are to be found the causes of that rhythmic tendency to activity which nerve cell and muscle fibre alike exhibit. If normal neuro-muscular action may be thus induced the theory offers a clue to the comprehension of some of the most obscure morbid manifestations of these tissues, for, says Professor Loeb, "that certain ions are capable of bringing about forms of irritability in nerves and muscles which do not exist normally may perhaps furnish the explanation of a certain number of morbid phenomena (neurosis and hysteria) in which the motor and sensory reactions of the patient are modified."

In thus labouring as it may seem the successive phases of structure from the grossly obvious to such as the microscope

(Verworn: General Physiology). The effect also of these external agencies as well as others like moisture and the density of the surrounding medium on the nutritional activity and on the power of reproduction as well as on the motility of the simplest organism has been experimentally demonstrated, suggesting a chemical complexity of protoplasmic structure which is open to disturbance by the external world.

[17] As bearing upon these and like questions a very large body of experimental evidence exists to show that there are great varieties in protoplasm, and that it is far from being of a uniform character in all cases as was formerly supposed, and this even amongst the simplest unicellular organisms. The differences in behaviour exhibited by different species in response to various reagents clearly demonstrate this. For whilst some are so profoundly affected in their molecular constitution as to succumb on being subjected to certain poisons, others, in no wise differing so far as can be determined by the means at present at our disposal, are quite uninjured. Some kinds of bioplasm appear to have a general high resistance to all chemical agents while others have a high or low resistance to particular agents only; thus nervous tissue, for instance, is readily and injuriously affected by substances—e.g., cocaine or nicotine—to which many protophyta are indifferent. Since also many toxic bodies which produce no effect upon dead albumin are yet violently poisonous to living protoplasm, it would seem probable that the latter contains in its construction certain unstable groups of molecules which undergo replacement by others from the toxic agents. All this goes to show that protoplasm is extremely complex and consists of numerous kinds of compounds many of which are very unstable. Also that not all protoplasm contains the same compounds but that these are dissimilar in different organisms. And further, that not all of the compounds in any protoplasmic body are essential to life, and that we may so act on a protoplasmic body by a weak reagent and gradually change its composition so that it will no longer be killed by a strong solution of the same reagent, thus effecting an acclimatisation, or as we should say, rendering the organism immune. (See Experimental Morphology by Dr. Davenport, 1897.)

[18] Sir J. Burdon Sanderson, Bart., M.D., F.R.S., Times, May 11th, 1903.

[19] Nature, loc. cit.

[20] American Journal of Physiology, 1901-02.

[21] Philadelphia Medical Journal, March 22nd, 1902.

discloses, and thence to the hypothetical, chemical, and electrical constitution of the material involved, it is not for a moment claimed that the investigation and the observation of functional manifestation have waited for anatomical discovery. In many departments of physiology, notably in that concerned with nerve and muscle and with secretion, a large mass of information has been acquired as the result of carefully devised experiments, whilst but little has been done towards ascertaining the ultimate structure of the tissues concerned—little, that is, beyond what was known a score of years ago or more. But in respect to such tissues as these microscopic examination would seem almost to have reached its limits, and for the complete comprehension of the physico-chemical phenomena more recently ascertained the problem of the chemical and electrical constitution of the muscle or nerve fibre and of the gland cell awaits solution. Though it may be true that "it is quite impossible to attain to a complete knowledge of function without a thorough anatomical analysis" (Huxley), and this it may be added although the observation of function may have led to the study of structure, yet it is clear that "structure" must include a wider range of meaning than hitherto it has been commonly thought to bear and to reach into those regions where observation is conditioned by speculation and where theory has to take the place of demonstrable fact. However true it may be that for a general conception of the physics of the circulation Harvey was beholden to his anatomical knowledge, it is also true that for our later acquired information of the share taken in the movement of the blood by the arteries an acquaintance with the structure of these vessels is necessary, whereby their elasticity and their tone are referred each to its own tissue. The problem that Harvey solved was one that in its broad features was a mechanical one, but it does not end with such information as the gross anatomy of the organs and the histology of the tissues supply. Behind it lie the contraction of the muscular substance of the heart and arteries and the nervous governance of that material, which involve considerations of another character. For the complete understanding of the electrical and chemical changes which are associated with the passage of the nervous stimulus and the muscular response we should require to know what are the underlying molecular rearrangements and alterations in chemical constitution crudely represented by the formation of certain waste products. At this point, I say, precise knowledge fails us and we turn for assistance to theories which have been so helpful in the explanation of the properties of non-living matter, consistent therein with the principle laid down by Mayer half a century ago "to refer both vital and physical phenomena to a common measure."

Whilst I have endeavoured to illustrate with such completeness as my brief time permits the relationship of physiology to anatomy, whether normal or morbid, the general tenour of my remarks will have indicated that when the limits of visibility, even with our most perfect instruments, have been reached the separate investigation of structure and of function no longer becomes possible. The molecular constitution, chemical or electrical, of living matter becomes conceivable only in terms of action, and function and structure are but aspects of each other. No deeper secrets of nature exist to be searched out by observation and experiment than these and none will more benefit mankind in their discovery. To their investigation therefore, in obedience to the precept of Harvey, do I exhort you to turn.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Oct. 14th, Mr. Christopher Heath, the President, being in the chair. Three new members were elected, the death of a member was reported, and the resignation of a member was accepted. The death of a widow, aged 87 years, who had been receiving £50 per annum since May, 1890, was announced. Applications for assistance were read from three orphans of a member who died in 1899 and grants at the rate of £12 per annum were made to them. Applications for renewal of grants were made by 53 widows, 16 orphans, and four recipients from the Copeland Fund and £1321 were voted to be distributed among them at the next court subject to the report of the visitors. It was resolved to make the usual present at Christmas to the widows and orphans on the fund—viz., £10 to each widow, £3 to each orphan, and £5 each to the four orphans on the Copeland Fund. The expenses of the quarter were £64 14s. 6d.

ON THE EFFECT OF PERFORATION OF THE COLON BY SMALL FOREIGN BODIES, ESPECIALLY IN RELATION TO ABSCESS OF AN EPIPLOIC APPENDAGE.[1]

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FEW of us probably realise the variety and amount of material coming under the denomination "foreign bodies" daily ingested with our food. The methods employed in grinding wheat furnish minute angular particles of mill-stone; small fragments and chips of straw are not uncommon in flour and in bread. Spicules of bone from beef and mutton, birds and rabbits; needle-like bones from fishes; shot from game; loose stoppings from teeth, and even the teeth, true and false, are occasionally swallowed. Chips from metal instruments employed in preparing food, or from the pans and pots used in cooking are sometimes detected in the course of a meal. Small bodies of this kind occupy the alimentary canal more frequently than do pins, needles, tacks, nails, and bristles accidentally swallowed by individuals who, in the course of their work, foolishly use the lips for purposes mainly fulfilled by the fingers. Even these form a distinct class from such gross things as corks, coins, knives, spoons, forks, razors, glass stoppers, &c., swallowed by lunatics and children, or by men and women for sensational gain, or by thieves to avoid detection.

Those who doubt the large number and variety of metal bodies which find their way into grain will receive instruction by visiting a large brewery, for the grain, previously to grinding, passes over a magnetised bar which extracts and retains the pieces of metal. This metallic rubbish is collected and preserved to excite by its amount and variety the astonishment of visitors. (Samples of the pieces of metal retained by the magnet were exhibited to the audience. They consisted of almost all kinds of nails, brads, tacks and screws, wire tags of laces, metal eyelets, dress-hooks, needles, pins, pens, wire, buttons and metal skeletons of buttons, and chips of metal in great variety selected from a peck of metallic rubbish.) With the grosser kinds of foreign bodies this lecture has no concern; my object is to draw attention to a particular effect which arises when a small foreign body perforates the colon, especially in the vicinity of an epiploic appendage. No doubt hundreds of foreign bodies are ingested and egested without causing the least concern to the host, but the frequency with which an anal abscess comes under the surgeon's notice serves to show that many fail to pass harmlessly through the sphincter.

Before endeavouring to explain the manner by which small foreign bodies probably escape safely from the bowel, as well as indicating the very serious mischief which they are liable to cause when retained, it will be necessary to draw attention to some points in the disposition of fat around the colon and especially its relation to the epiploic appendages. In a transverse section of the descending colon from a healthy adult the fat would have such an arrangement as is represented in Fig. 1. The appendix epiploica is, anatomically, a fold of peritoneum filled with fat and its size depends entirely on the amount it contains; the fat of the appendix can be shown by simple dissection to be directly continuous with the subserous fat which normally fills the interspace of the mesocolon and, with care, it is easy to show that the serous investment of the colon reposes on a subserous tissue containing varying proportions of fat throughout that part of the circumference of the gut which receives a peritoneal investment. In the diagrams used to illustrate this lecture no attempt is made to represent the longitudinal bands of the muscular coat.

When a transverse section of the descending colon from a very fat individual is examined the relation of the subserous fat to that of the epiploic appendix and the mesocolon is easily seen. The part of the colon which is most avoided by fat is the middle tænia or longitudinal band; even in very obese individuals this band is rarely obscured.

[1] An address delivered to the Nottingham Medico-Chirurgical Society on Oct. 17th, 1903

After mid-life a variant appears occasionally in these transverse sections in the form of a pouch-like diverticulum; it is possible that some of these sacculations, which must not be confounded with normal haustra of the colon, may serve as retreats for some of the mischievous small foreign bodies which are carried into the colon.

FIG. 1.

Diagram of a transverse section of the colon from a thin individual, to show the relationship of an epiploic appendix to the subserous fat.

In the specimen from which the diagram, Fig. 2, was prepared one of these sacculi actually appeared in section. It is clear from a consideration of the normal anatomy of the colon that there are portions of its circumference where a sharp foreign body could penetrate and escape into the general peritoneal cavity and the thinner or more emaciated the person the greater is the arc of the gut which would

FIG. 2.

Diagram of a transverse section of the colon from a very fat man, aged 55 years, to show the disposition of the subserous fat and its relationship to the epiploic appendage. In the specimen from which the diagram was prepared a sacculus (or pressure pouch) had been divided in making the section.

allow this form of penetration. In a fat person, on the other hand, although there is a short arc where it could be easily perforated into the general peritoneal cavity there is a far greater extent of its circumference so protected by fat into which the escaping body would be more probable to find its way and in a certain proportion of cases the penetrating body would lodge in an adjacent epiploic appendix. The fatter the patient the less likely is the foreign body to penetrate into the general peritoneal cavity and the greater is its chance of entering an epiploic appendix.

I will now endeavour to prove that foreign bodies from the colon do lodge in the epiploic appendages and to show some of the consequences which arise therefrom.

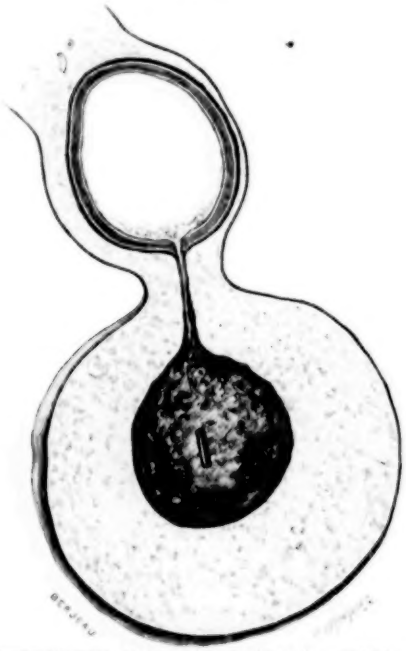
CASE 1.—On Easter Sunday, 1903, Dr. Edwin Hollings asked me to see a man, aged about 40 years, who had acute pain in the left iliac region accompanied with some local swelling, tenderness, and fever. The signs were such that if they had occurred in connexion with the right instead of the left iliac region a diagnosis of subacute appendicitis would have been irresistible; indeed, the signs were so characteristic of this affection that I made a careful examination to satisfy myself that the patient's viscera were not transposed. We came to the conclusion that he was suffering from an abscess in connexion with the descending colon, probably depending on perforation. We were then informed that he had been accidentally shot in the abdomen many years previously and as the bullet had never been extracted there arose a suspicion in the minds of the patient, his relatives, and medical man that it might be the cause of the present trouble. This view I did not seriously entertain. On the next day Dr. W. Hale White joined us in consultation; he shared our opinion as to the inflammatory nature of the swelling, the almost certain presence of pus, and the advisability of operation. On the following morning I carefully cut through the abdominal wall over the prominent part of the swelling; the line of the incision corresponded as nearly as possible with the lower part of the left linea semilunaris and I tried to find the pus by burrowing behind the peritoneum but without success. I then incised the peritoneum and found an ovoid body as large as a bantam's egg and quite as smooth, sessile on the descending colon. I soon recognised that we had to deal with an enlarged and inflamed epiploic appendix containing a foreign body. I explained this to Dr. Hale White and Dr. Hollings and then split the lump longitudinally with the scalpel. In the centre of the lump there was a distinctly circumscribed cavity communicating with the lumen of the colon by a narrow passage; inspissated fæcal matter filled the cavity and in the midst of it I detected a sharp foreign body. The anterior and posterior halves of the epiploic appendage were secured with silk sutures to the peritoneal edges of the wound, and after inserting a drainage-tube into the fæces-containing cavity the incision was brought together with interrupted sutures of silkworm-gut and dressed with cyanide gauze. About the fourth day fæcal matter escaped freely from the wound; this continued till the tenth day and then the sinus slowly granulated; the patient left London for the seaside at the end of the fifth week.

The relationship of the cavity in the epiploic appendix is represented diagrammatically in Fig. 3. When in the course of the operation this lump was detected those present at once became alarmed for fear that we had to deal with a tumour of the colon, but I had had an opportunity of operating on a somewhat similar case which led me to study the condition carefully.

CASE 2.—A spinster lady, about 60 years of age, was placed under my care with symptoms of chronic intestinal obstruction associated with a definite lump of the size of a bantam's egg in the left iliac fossa. The age of the patient, the situation and mobility of the lump, in conjunction with the frequent passage of liquid fæces from the anus, led to the diagnosis of cancer of the descending colon. The lump, however, caused more pain than is usual with cancer of the colon and it was particularly tender—indeed, the pain and tenderness rather than interference with the function of the bowel induced the patient to seek and to submit to surgical help. The parts were exposed by means of an incision in the left linea semilunaris and an oval body was exposed on the sigmoid flexure of the colon; its hardness led me to regard it as a malignant tumour. The adjacent walls of the gut were very thick and seemed so infiltrated with what I regarded as cancer that a wide colectomy was decided upon and the cut ends of the colon were secured separately in the abdominal incision. The resected portion after the usual preparation was bisected and in the middle of the suspected cancerous lump I found a smooth, round, pill-like body lodged in a smooth-walled cavity communicating with the mucous surface of the bowel by a narrow tubular channel. The globular body in the cavity had a fragment of straw for a nucleus (Fig. 4). The course of events in this case may be

explained as follows. The piece of straw ingested with food perforated the wall of the colon in the immediate vicinity of an epiploic appendage and caused a small leakage of bowel contents. The extravasation of fæcal matter into the epiploic appendage infected it and set up inflammatory changes which transformed this fatty fringe into a large oval lump. The continued presence of the fæcal concretion

FIG. 3.



Diagrammatic representation of a fæcal abscess in an epiploic appendage attached to the sigmoid flexure of the colon, caused by a small foreign body escaping from the gut. (Case 1.)

which had formed around the piece of straw acted as an irritant and prevented the sinus from closing, and the inflammatory changes extended into the walls of the colon immediately adjacent. Some months later I resected the exposed ends of the colon and successfully restored the continuity of the bowel.

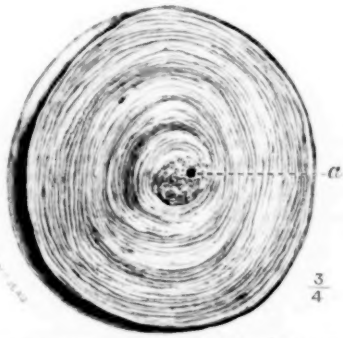
FIG. 4.

Diagrammatic view of a fæcal abscess in an epiploic appendage of the descending colon; it contained a pill-like body formed of inspissated fæces with a fragment of straw for a nucleus. (Case 2.)

In reflecting on these two cases it at once became obvious that other surgeons had probably encountered similar lesions and a suspicion arose in my mind that possibly some of the cases reported as successful instances of the excision (or resection) of supposed cancer of the colon without recurrence may have been examples of abscess of an epiploic appendix caused by a minute foreign body. A careful examination of the publications of those surgeons who have devoted much time and careful attention to the operative surgery of the intestine and of the colon in particular shows that they make no mention of foreign bodies in the appendices epiploicæ, and my inquiries in regard to this matter among physicians of great experience in maladies of the bowel being equally fruitless I ventured to think that the publication of the two clinical records which constitute the basis of this lecture may possibly focus attention on the subject and lead to the acquisition of some further knowledge. It may, perhaps, be useful to draw attention to some of the effects which follow perforation of the colon by small foreign bodies.

It is, I believe, true that a small piece of metal may traverse the wall of the gut and escape into the general peritoneal cavity and undergo encystment. Shattock[2] once found a rounded body with a diameter of 6·25 centimetres in the pelvis of a man between the rectum and the bladder. On section a piece of iron was detected in its centre (Fig. 5) surrounded by regular laminæ of

FIG. 5.



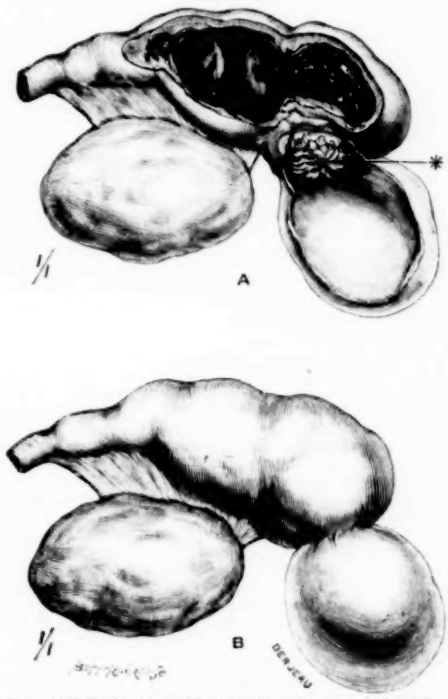
The sectioned surface of a rounded body found between the bladder and the rectum of a man. The centre consists of a piece of iron (a) surrounded by laminæ of structureless material. The piece of metal probably perforated the bowel and escaped into the general peritoneal cavity and became encysted by peritoneal exudate. (Shattock's specimen, Museum, St. Thomas's Hospital.)

structureless material. He regarded this as an instance in which a piece of metal taken into the alimentary canal had pierced the bowel and found its way into the peritoneal cavity and become encysted by exudation from the peritoneum. This explanation is satisfactory and the specimen is by no means unique. The peritoneum is frequently engaged in forming material such as is seen around this piece of metal. The conditions favourable for its production are sterile foreign bodies, coagulated fluids free from pathogenic micro-organisms, and especially cysts which are mobile, the spurious cysts which occasionally form around ovarian dermoids, the curious capsules around blood slowly effused from the Fallopian tube in the condition known as "tubal abortion" (Fig. 6), as well as those which surround sterile exudations from the tubes (Fig. 7), and the very complete fibrous capsules which invest echinococcus cysts projecting into the abdomen from the liver and more particularly those which grow in the omentum. This also explains how echinococcus colonies in the abdomen are provided with thick false capsules, whilst those which grow in the cerebrum have none. These observations prove also that the very large size of an epiploic appendage which contains a foreign body is in a large measure due to the deposit of lymph on its periphery and its subsequent organisation providing for it a stout and firm capsule. Speaking from my own observations, I think it quite exceptional for a piece of metal or other small body to penetrate harmlessly the wall of the intestine. It is a matter of common knowledge that when an ingested foreign body, especially a sharp fish-bone which resists the action of the digestive juices, a needle, or some similar thing, has its easy ejection hindered by the sphincter, the wall of the bowel immediately adjacent is apt to be perforated and this leads to

[2] Transactions of the Pathological Society, vol. xliv., p. 151.

the formation of an anal abscess. This painful and very common condition is fortunately easily and, as a rule, successfully treated by means free from risk to life. As a matter of fact the abscess in the epiploic appendage

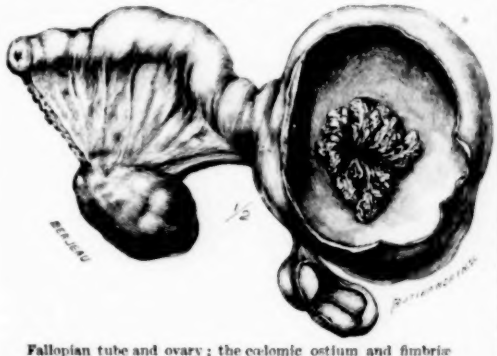
FIG. 6.



A gravid Fallopian tube with a pseudo cyst or capsule formed around blood effused through its ostomic ostium. A, shows the capsule in section and B entire. * Tubal fimbriæ.

which we have been considering is pathologically of the same character as an anal abscess which has burst internally and left a sinus communicating with the bowel. I have satisfied myself from a careful study of a number of patients under my own observation and care that some puzzling cases of suspected abdominal tumours which

FIG. 7.



Fallopian tube and ovary; the ostomic ostium and fimbriæ are inclosed by a capsule formed around an inflammatory exudation from the tube due to an acute gonorrhœal salpingitis.

spontaneously disappear and some which are treated by exploratory incisions and declared to be irremoveable cancers and then, in spite of the gloomiest prognostications the patient rapidly recovers and lives to mock at his advisers. In 1894 Greig Smith read a paper before the Royal Medical and Chirurgical Society on the (So-called) Spontaneous Disappearance of Solid Abdominal Tumours based on the observation of three cases;[2] the leading features of these cases were the presence of a solid tumour in the abdomen, the absence of pyrexia, clinical evidence of malignancy on abdominal section, and ultimate disappearance of the tumour with complete restoration to health. Having had some experience of these "disappearing tumours" I took part in the discussion which followed the reading of the paper and propose to reproduce briefly here the details of the most striking case (the remarks are fairly fully reported in the Proceedings of the Royal Medical and Chirurgical Society, Third Series, vol. vi., p. 46). A married woman, 56 years of age, had had for some weeks trouble with her bowels which culminated in signs indicating obstruction in the descending colon. Scybala could be easily felt in the colon and on vaginal examination a tumour could be made out feeling like an impacted fibroid. The patient after her admission into the Middlesex Hospital was examined by several of my senior colleagues, medical and surgical, and eventually operation appeared necessary. When the pelvic lump was exposed by an abdominal incision the uterus and the sigmoid flexure were found firmly adherent to each other and the thickening of the wall of the bowel and enlargement of the body of the uterus led me and those of my colleagues who attended the operation to regard the case as one of primary cancer of the sigmoid flexure of the colon adherent to, and probably infiltrating, the uterus; it was therefore unsuited for further operative interference. The wound was sutured, the patient returned to bed, and a gloomy prognosis was given to the relatives. Fortunately, the prognosis was falsified by the subsequent course of events. The woman recovered rapidly and left the hospital. Many weeks later, wishing to know what had happened, I called upon the patient and found her occupied with domestic duties and in excellent health. For many years she continued well.

I have subsequently had experience of similar cases and have learned to recognise them. In the light shed by the study of an abscess in an epiploic appendage I believe there can be little reasonable doubt that in some instances at least the cause of the tumours of the abdomen which disappear spontaneously after operation is a minute foreign body which has perforated the cæcum, the colon, the sigmoid flexure, or the rectum. It may perhaps be worth while to draw attention to the perfect way in which the piece of straw, which was the cause of trouble in Case 2, is completely surrounded and isolated by hardened fæcal matter, for it indicates very satisfactorily to my mind the way in which angular and dangerously pointed bodies may traverse the colon and be safely ejected without harm to the host—that is, they probably serve as a nucleus for the conglomeration of fæcal matter and, carefully isolated in this way, they escape through the anus without injuring the bowel wall in the neighbourhood of the sphincter, for common as anal abscess is I feel sure that it stands numerically in very small proportion to the great number of small foreign bodies which are daily ingested and egested. Be this as it may, it certainly supports the traditional and vulgar manner of treating patients known to have swallowed foreign bodies, especially pins, by making them eat very freely of suet dumplings.

Brook street, W.

THE CORRECTION OF HEREDITARY TENDENCIES.

BY SIR SAMUEL WILKS, BART., M.D. LOND., LL.D. EDIN., F.R.S.

I HAVE read with much interest the controversial letters on the laws of heredity which have appeared in THE LANCET and on these I will only make one comment—that I fear, on the one hand, that some of the writers seem to be influenced in their statements by their conviction of the absolute truth of the Darwinian doctrine of the non-transmission of acquired habits, whilst, on the other hand, there are some who make opposed statements as they hold the doctrine to be only partially true. There should be no suspicion of a bias in the scientific mind, for such an expression as "it must be" looks as if there was an endeavour to make the facts fit the creed.

[2] THE LANCET, Jan. 27th, 1894, p. 207.

I am not about to write on the question lately discussed, although certain phrases used by some of the writers have prompted the present communication.

My subject is the question of how far hereditary tendencies may be modified or arrested in the *individual*, as it is one the importance of which cannot be overrated. It is intimately connected with the education and the training of children, besides its being regarded as one of the functions of the medical man when his opinion is sought by parents as to the future of their sons and daughters. I myself believe firmly that very much may be done to arrest the development of many inherent traits and therefore I have never failed to contradict when possible any writer or preacher who asserts that the medical profession is teaching the immoral doctrine of irresponsibility and that criminals are only repeating the inherited vicious acts which their fathers had perpetrated before them. Although assenting to the dictum that we are all the victims of our organisation and knowing that the proofs of hereditary influences are too strong to be gainsaid, yet I equally maintain that these propensities may be arrested or so modified in childhood as almost to change the character. In judging therefore of a person's acts it is as important to ascertain his early surroundings as it is to discover his hereditary tendencies. I have therefore always denied that the medical profession holds unreasonably to the doctrines of irresponsibility and fatalism.

The facts of hereditary tendencies are too frequent and striking to be overlooked, as in the case where we see a whole family go wrong. For some criminal offenders we have often felt more pity than anger and especially when we have seen that they possessed no power of control over their inheritance. In a long experience I have seen too many cases of inherited vicious propensities to doubt the fact, but I am equally impressed with another fact—that these evil tendencies may be greatly corrected by appropriate counteracting surroundings. If these are not forthcoming and a child with evil propensities is forced to dwell in an atmosphere where such propensities are developed he soon goes to ruin; on the other hand, if he is removed to other surroundings a very different life may be expected. The value of education in this respect has probably been more accepted in England than in any other country; it does not mean cramming a boy with learning but treating him in a manner whereby the qualities of self-respect, integrity, independence, and a just dealing with others are brought out. Taine and some other French writers have explained that when they recommended the discipline of our public schools they had in view the importance of training the character. The Duke of Wellington properly appraised this when he declared that the battle of Waterloo was fought out at Eton, at Harrow, and at Rugby. The very common belief that a certain tone belongs to a school could have no meaning unless it were equally true that individual propensities were suppressed or modified. It might be said that when a Rugby boy was at one time always recognisable it was due to a mere mannerism or to the possessing a local "slang," but if this was true in part there remained the greater truth that he was the recipient of something much deeper which was perceptible throughout the whole of his life. It may be remembered that when Arnold had unwittingly received into his school an especially vicious boy he considered it a waste of time to bestow his energies upon him and wisely got rid of him. But lately the Rev. John Watson ("Ian Maclaren"), who thoroughly understands boys and school life, gave an address on the Education Act and in this he was reported to have said that the real educator and guardian of the youth was the schoolmaster. It was not the parent or the parson but the schoolmaster who made the boy: he might be tinctured by the Archbishop of Canterbury on the one hand or by the Kirk on the other but this did not much matter. The example and discipline of the school prevailed over all precepts. Such an opinion as to the capability of a boy's character being affected by education is of immense importance when coming from a man of such great perception and experience.

I have heard exactly the same sentiment expressed by intelligent schoolmistresses when they have declared that the influence of the school over froward children has been of greater value than any teaching at home. A little girl, for example, has bad habits of various kinds, but when placed with other children there is no opportunity for their display; they naturally disappear and she at the same time almost necessarily adopts some newer and better ones and consequently she exhibits no more peculiarities for fear of being pointed at by her comrades. A few weeks' discipline of this kind without any actual correction has sufficed to change the whole outward character of the child. It is often said that the weak side of the board school is that it tends to bring all the pupils to a dead level of uniformity and so suppresses individual genius. Whatever amount of truth there may be in this it is equally true that the school tends to suppress as well evil habits and propensities.

I have seen some very remarkable examples of the influence of new surroundings in children. I have frequently before my mind the case where the children in a family took more or less after their ill-tempered and wrong-headed mother, but on their being sent to a boarding-school, with the exception of one, and receiving a good education they were able to get on in life although with many vicissitudes. The remaining boy brought up at home had the very worst of educations possible and although of considerable ability he grew up utterly worthless. His own natural propensities were actually fostered. I am also well acquainted with another case of an opposite kind. Both parents were vicious in various ways and all the children except one, as might have been expected, went to the bad. The boy spoken of was adopted when young by some childless relatives who were highly cultured, refined, and in every way most worthy people, so that all his surroundings were as good as those of his brothers and sisters were bad. He filled the situation in which he was placed admirably and entered into all the good works in which his foster-parents were engaged. Everyone spoke of him as a most excellent lad. Whenever I talked to him I judged from his conversation and manner and allusions to newspaper stories that his mind wandered into other regions, and I felt a conviction that he was kept straight by the force of circumstances and that if by chance he had gone from his adopted home into a different atmosphere he would have lost his balance and wandered from the right path. In some cases, therefore, I have every reason to believe that the hereditary tendencies were changed by the new environments but in others they were only suppressed; still this does not diminish the value of new surroundings.

Medical men are constantly asked about the education of children, especially when these are froward and unruly; and when they see that fresh influences are required and the question of a boarding school is raised, the mother often protests, with the fear that her child may be contaminated in morals and that a mother's care must necessarily be the best. There is a show of reason in this, for a very vicious girl is capable of contaminating all her school-fellows, but, on the other hand, the mother seldom perceives the amount of harm done by her own way of bringing up, so that I feel confident that in a large majority of cases the boarding school is a much better place for the education and the formation of character than the home. It is unpleasant to tell the parent that she is the worst person to have charge of her child and yet this fact may be most apparent to others. I remember the case where a well-meaning but severely tyrannical woman felt it her duty to bring up her child in the habit of obedience and so compelled him to do certain things and to desist from others in which he might be innocently engaged. This brought about deceit and story-telling. When he grew up and was found to be both deceitful and an inveterate liar I attributed it to the mother's continued thwarting him on principle. If a mother possesses some fault or weakness it is probable that the child may also inherit it. In this case the mother often in the most natural manner encourages and develops it in her child. Sometimes this is most flagrant. In one case I have seen a very frivolous woman whose mind was wholly engaged on herself and her outward appearance dress up her little girl in the most fashionable finery, put a fan in her hand, and make her walk up and down before the admiring visitors whilst she went through all the manœuvres of a coquette. Or, again, a woman will dress up her little boy in the most extravagant costume and parade with him through fashionable streets as she would with her pet dog. All these and similar things are done for the mother's vanity, but woe to the child. Such cases might almost warrant the interference of the society for the protection of children. There are, unfortunately, a large number of cases less odious than these but equally mischievous where the parents bring the child into prominence on account of some remarkable gift which he or she is

thought to possess and this, which is not unusually a very undesirable one, is developed by the devoted parents. A sharp, clever child who readily picks up anything he hears and will talk on any subject is trotted out before an admiring audience to recite or to make a speech, the parents being scarcely alive to the fact that a retiring, bashful, thoughtful child is generally the one of the greater mental power and of the greater promise. I have known several of these clever children who have at the same time no power of attention which is one of the very highest qualities that anyone can possess. This class of children should be sent to a boarding school where all these clever tricks are suppressed. I mention these cases because, believing that hereditary tendencies may be suppressed or modified by education, it is the duty of the medical attendant of a family to make a serious study of the child on whose future he is asked to give an opinion, or even a final decision, as to the training and occupation.

In speaking of the influence of new environments on subjects which have inherited certain tendencies I might refer to the whole animal and vegetable kingdoms in proof of the contention. Wild animals are subdued not only by fear, as we see in the lion and tiger exhibitions, but by slowly taming as when a dog or a parrot is taught not to bite. In the vegetable kingdom this operation of new surroundings is most marked. A botanist was lately telling me of a plant which had been under his observation for many years and which in a neighbouring district had so altered in character that a modern book had described it under a different name either as a variety or a distinct species. I have been told also that the hereditary tendencies of many exotic plants are observed to alter when brought to this country and that material changes occur as they become acclimatised. The wondrous varieties which can be made in flowers by cultivation are known to everybody. When we speak of the times of the year in which trees and plants bud and flower, as well as the times for the pairing of birds and their migration, we are strikingly impressed by the fact of how much these may be altered by circumstances. Let there be, for example, exceptional weather in the early months of the year making them resemble those of spring the effect on all living things is marvellous—the whole aspect of nature has undergone a change and is bursting into life, the trees begin to bud and the smaller plants to flower and the thickets become green. In the animal kingdom it is the same—the birds come forth and pair, they begin to build their nests, and their songs are heard all around.

I may mention one particular instance of the influence of sun and air by an example always before me. When I came to my present residence two years ago there grew a handsome plane tree close to the back of my house; as it shut off the light and warmth from the rooms I determined to sacrifice it. When it was cut down I had a slice taken from the trunk a few feet from the ground. On examination of the section the usual centre or pith was quite away from the true centre, being placed towards one side, and then on counting the annual rings I found in a corresponding manner that they were much narrower on the smaller side than on the other. This narrow side represented the part of the tree next the house, the broader, expanded part was that which looked out into the garden and received the warmth of the sun and more air. This specimen, which is before me on my desk, is always preaching to me the lesson which I have been inculcating—the importance of surrounding influences; that all living things are dependent for their character on two things—their hereditary tendencies and their actual surroundings. In the human being the latter may be called education. My particular object in writing this paper is to enforce the power of environment on the hereditary tendency. I will go no further than to say that I speak only of the individual, whether the alteration may be continued in the progeny I will leave to others to decide.

Hampstead.

THE SEMI-TEETOTAL PLEDGE ASSOCIATION.—The committee of this association, of which Lord Roberts is President, is daily receiving fresh signatures to a definite pledge to abstain from all intoxicating drinks except at the midday and evening meals and 35,000 forms of pledge have been applied for. A branch has been formed in Cape Town and funds for extending the work are urgently needed. The honorary secretary is Mr. G. H. F. Nye, 76, Regent-street, London, W.

ON THE USE OF PURE CARBOLIC ACID IN THE TREATMENT OF SMALL-POX.

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AND

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IN THE LANCET of Feb. 21st, 1903, p. 518, there appeared an article by Dr. J. T. Neech, medical officer of health of Halifax, suggesting the use of pure carbolic acid as a local application in small-pox. He described two cases in which he had used this treatment with very beneficial results. As we have had a large number of cases of small-pox in the borough of Bury during the past nine months there has been ample opportunity for testing the value of this method and we think it advisable to record briefly the results of our experience of this remedy. In order the better to form an opinion as to the efficacy of carbolic acid when used in its undiluted form to modify the course and termination of small-pox, we selected for treatment for the most part severe cases occurring in unvaccinated subjects. As the anti-vaccination element is very prominent in Bury and also in some of the neighbouring districts we have had, perhaps, an unusually large proportion of unprotected cases to deal with, hence the results of this particular line of treatment are not so liable to be complicated by the modifying effects of vaccination.

The treatment is carried out in the following manner. The pure acid in a liquefied state is applied to the vesicles over a limited area with a small camel's-hair brush, the application being made on successive days. On the first day the face and neck are selected for treatment, on the following day the hands and the arms, then the lower extremities, and, finally, the trunk. The effect of the acid is seen in the rapid shrivelling up and scabbing of the vesicles. A second or third application may be made if necessary over certain parts of the body. An important detail of the treatment is to secure the early removal of the scabs, either by an oil poultice or otherwise, as this tends to prevent subsequent abscess formation.

This method of treatment is, of course, one which takes some time to carry out, as it must be done carefully and thoroughly if the best results are to be obtained. There is no reason why it should not be intrusted to an intelligent nurse with instructions to use the acid cautiously in the neighbourhood of the eyes and not to allow it to run on the healthy skin. The treatment is found to cause little or no pain or discomfort; in fact, it relieves the intense irritation which is so prominent a feature in small-pox. We have not observed any signs of carboluria or other evidence of toxic action from absorption of the drug. The effect would appear to be purely a local one, the acid penetrating the walls of the vesicles and pustules, disinfecting their contents, and hence preventing the absorption of septic matter into the system. The accompanying table gives particulars of some of our cases.

As will be seen from a reference to the table, one of the most striking results of the treatment is the comparative mildness of the secondary symptoms or those coincident with the maturation of the pustules. In many of our cases the patients expressed themselves as feeling well and hungry by the eighth or ninth day after the appearance of the rash or even earlier. By this time the pustules on the face will have disappeared and the great majority of those on the limbs and trunk will have dried up or aborted. After the temperature has fallen on the appearance of the eruption it usually remains at a low level during the rest of the illness, even in severe confluent cases averaging not more than 100° or 101° F. In several of our patients the temperature was practically normal throughout. A corresponding improvement is noticed in the state of the pulse and the general symptoms.

With regard to the subsequent pitting we are of opinion that the carbolic treatment is decidedly beneficial in lessening disfigurement, although it is not to be relied on as a certain preventive. We think it reasonable to conclude that, by shortening or modifying the severity of the pustular stage

of the disease, the liability to the formation of deep and permanent scars is diminished. Another point is that this use of the germicide tends to diminish the risk of infection from aerial convection and to remove the disagreeable odour which accompanies many cases of the disease.

The total number of cases treated by us up to the present has been 35, of which 22 were of a severe kind, mostly confluent, more than half of these being in unvaccinated subjects. Five of the cases proved fatal, two of which were children suffering from scarlet fever, while the third was one of malignant small pox with minute subcutaneous hæmorrhages and death during the papular stage. We may say that in the earlier part of the epidemic we confined ourselves to using the acid on the face and hands with the idea of diminishing the scarring, but in order to obtain the best results it is necessary to apply it carefully over the whole body as described.

Table giving Particulars of the Use of Carbolic Acid in Small pox.

No. of case.	Sex.	Age (years).	Vaccination.	Type of disease.
1	M.	14	Unvaccinated.	Severe confluent.
2	M.	56	,,	,,
3	M.	8	,,	,,
4	F.	42	In infancy.	,,
5	M.	32	,,	Confluent.
6	M.	10	Unvaccinated.	,,
7	F.	35	In infancy.	,,
8	M.	8	Unvaccinated.	Severe confluent.
9	M.	31	In infancy.	,,
10	M.	14	Unvaccinated.	,,
11	M.	39	,,	Confluent.
12	F.	40	,,	Severe confluent.
13	M.	35	,,	,,
14	F.	6	,,	Hæmorrhagic.
15	F.	48	In infancy.	Severe confluent.
16	M.	28	,,	Discrete, rather severe.
17	M.	30	,,	Discrete, fairly severe.
18	F.	10	Unvaccinated.	Confluent.
19	M.	34	In infancy.	Discrete, fairly severe.
20	F.	12	Unvaccinated.	Discrete, severe.
21	M.	46	In infancy.	Malignant confluent.
22	M.	6½	Unvaccinated.	Severe confluent.

REMARKS.

CASE 1.—Some secondary fever was present; recovery. There was no pitting. The acid was applied to the face and the arms only.

CASE 2.—The patient was an alcoholic and in a low state of health. Severe pulmonary symptoms developed. The temperature remained high throughout. Death occurred on the tenth day of the eruption.

CASE 5.—The patient was suffering from scarlet fever when attacked by small pox; there were severe initial symptoms. Death occurred on the fourteenth day of the eruption.

CASE 4.—The temperature fell to the normal on the fifth day after the eruption; recovery ensued.

CASE 5.—No secondary fever was present; recovery ensued. The pitting was very slight.

CASE 6.—There were little or no secondary symptoms. The convalescence was slow owing to an abscess on the face.

CASE 7.—The febrile symptoms were slight. Recovery ensued.

CASE 8.—Secondary symptoms were almost absent. The patient was quite convalescent by the ninth or tenth day.

CASE 9.—The face only was treated with the acid. The case was prolonged. Slight scarring resulted.

CASE 10.—The acid was applied to the face and arms only. The case was somewhat prolonged, being complicated with boils. There was very slight scarring on recovery.

CASE 11.—The recovery was rapid, with practically no pitting.

CASE 12.—There was no secondary fever. A rapid convalescence was followed by very little disfigurement.

CASE 13.—The patient had a bad alcoholic history. Severe delirium and insomnia were present for three days, requiring large doses of morphia. The temperature during the secondary stage only once reached 101° F. The recovery was rapid.

CASE 14.—This case was a very malignant one. There were numerous minute subcutaneous hæmorrhages and marked pulmonary symptoms. Death occurred on the third day of the eruption.

CASE 15.—There was a rapid convalescence after the eighth day of the eruption.

CASE 16.—The temperature became normal on the fifth day of the eruption. The convalescence was rapid.

CASE 17.—There was no fever after the initial stage. The patient made a good recovery with very slight scarring.

CASE 18.—There was slight fever; recovery ensued.

CASE 19.—No fever was present; recovery ensued.

CASE 20.—There was no secondary fever; recovery ensued.

CASE 21.—The carbolic treatment was only used on the face and the wrists. The patient died.

CASE 22.—The patient was suffering from scarlet fever with an abscess of the neck. Death ensued. The acid was applied to the face and the wrists only.

Bury.

THREE CASES OF ERYTHEMA EXSUDATIVUM MULTIFORME.

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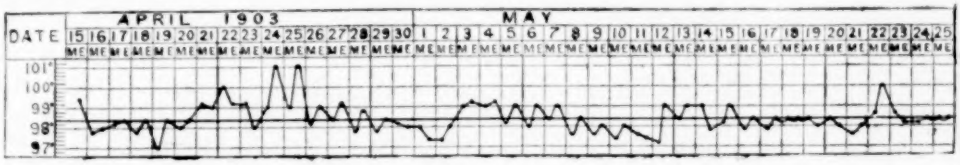
IT has seemed to me worth while to record these three cases and in some detail, not so much because of the comparative infrequency of the disorder as that they throw some light on a condition that has been rendered obscure largely on account of a faulty nomenclature. The three cases in virtue of the gastro-intestinal crises that were marked in all would be commonly termed Henoch's purpura but seeing that the particular syndrome of symptoms depicted by Henoch is merely one manifestation of a morbid state that exhibits protean changes of form the attempt to establish them as a distinct clinical entity can only serve to make more difficult the search for the underlying cause. The name that I have preferred to use is adopted from Osler as the best to hand, in that it enables us to group all the variations of type under a single head. In these cases of mine purpura and erythema were alone seen but Osler has also described urticaria and other conditions. In the most constant symptoms of the disease—that is to say, in the skin lesions, in the articular and peri-articular effusions, and in the abdominal crises—we are apparently dealing with a number of extravasations either of blood or of serum, but in the presence of nephritis and endocarditis, each of which was present in one or other of my cases, we are driven a step further back. In the light of other diseases we can hardly doubt that we have to do with a toxæmia which, like that of scarlet fever, spends itself with varying force on the skin, the kidneys, the heart, and the joints, and which in its cutaneous features presents a marked symmetry. In all of these three cases I have had careful cultures made of the blood but in each instance with negative results. I have not hesitated to refer the crises of abdominal pain to extravasation because of the close association of this symptom with extravasations that are visible to the eye on the surface of the skin. Moreover, one has in mind the visceral hæmorrhages—suprarenal for example—that are so commonly found in cases of purpura fulminans. The abdominal symptoms are such as may well be due to effusion into the wall of the gut and in one case that I have seen, but which is not here recorded, the diagnosis of acute intestinal obstruction was actually made until the appearance of the familiar symptoms cleared the picture. As to how far the nephritis affects the immediate and remote prognosis it is, of course, impossible to infer from three cases; but in these and other cases that I have seen I have noted three different endings: in one case the patient died in some three days from the most intensely acute nephritis imaginable, in two others, of which Case 1 is an example, all signs of kidney disease subsided, and in another, to wit in Case 3, it seemed that the originally acute nephritis had settled down into a chronic condition.

CASE 1.—The patient was a lad, aged 16 years. He was admitted into King's College Hospital on August 15th, 1902, complaining of a rash and pain in the stomach on and off since the previous Christmas. The following notes were sent to me by Dr. R. P. Williams of Slough: "In January treated for purpura, followed by abdominal pain and vomiting; next the ankles and knees swelled and the temperature rose to 101°F. Hæmorrhage from the gums and kidneys followed, after which he recovered, having been ill six weeks. After this he was kept under observation and treated with perchloride of iron and sulphate of magnesia. In March, 1902, a further eruption of purpura. In July, 1902, the present attack commenced with diffuse swelling of the left wrist (involving both tendon sheaths and joint), abdominal pain appeared as before, the vomiting was less than on the previous occasion, and blood casts were found in the urine." The family history and personal antecedents of the patient were quite unexceptionable. He had a comfortable home and

was well fed. The temperature on admission was 100°. The pulse was quick and markedly bigeminal. There was a faint blowing systolic murmur at the apex. The lungs were normal; there was no hæmoptysis. The urine was acid and of specific gravity 1037; it contained much albumin, was muddy, and urates were present in abundance; there were no casts and no blood. The skin as a whole was moist. On both arms and legs, front and back, there were numerous colonies of red "freckles" which did not disappear on pressure. On August 17th a fresh crop of spots had appeared in the last 24 hours on the outer side of the right upper arm. These ranged in size from that of a pin's head to that of a lentil; they were painless, reddish purple, and did not fade on pressure. He had vomited in the morning. His temperature had fallen to 99°. He was kept on a milk and soup diet. On the 18th the spots were fading but he had vomited again during the night. The temperature was normal. On the 22nd there was a general subsidence of all the symptoms. On the 24th during the night a fresh crop of purpuric spots, closely massed together, had appeared symmetrically around each ankle and on the dorsum of the feet, a few also on the extensor aspect of each upper arm. There was also some nagging pain in the umbilical region. There were no joint pains. The temperature was normal. He had a general sense of fatigue and this was always the case when a fresh crop of spots appeared. On the 25th the blood examination was as follows: red cells, 5,825,000 per cubic millimetre; white cells, 13,743 per cubic millimetre; hæmoglobin, 77 per cent.; polymorphonuclears, 66·6 per cent.; lymphocytes, 25 per cent.; eosinophiles, 5·8 per cent.; uninuclears, 2·2 per cent.; and basophiles, 0·4 per cent. The blood was sterile. On the 29th the pulse tension was very low. Adrenalin hydrochloride was given thrice daily by the mouth. On Sept. 1st the blood examination gave the following results: red cells, 5,000,000 per cubic millimetre; white cells, 6500 per cubic millimetre; hæmoglobin, 80 per cent.; polymorphonuclears, 59·7 per cent.; lymphocytes, 29·3 per cent.; uninuclears, 4 per cent.; and eosinophiles, 7 per cent. On the 2nd there had been no revival of symptoms since August 24th. The rash had disappeared. The amount of albumin in the urine was very small. The adrenalin showed no measured effect on the blood pressure. The patient had light diet with fish and was allowed to get out of bed into a chair. On the 3rd a fresh crop of purpuric spots appeared on the back of both feet as far as the heads of the metatarsals; there were no other symptoms. On the 5th the eyes were examined. The retinal veins were engorged; pulsation was to be seen in the left inferior vein at its entrance to the disc. There were a few scattered pin-point hæmorrhages over the fundus most marked in the periphery of the left eye. They resembled those on the feet but were smaller. By the 9th there had been steady improvement. The systolic murmur at the apex was constant. On the 10th the blood was sterile. On the 17th the patient left the hospital, having lost all his symptoms but still with the apical bruit. There was no albumin in the urine.

To summarise this case there were—(1) symmetrical outbreaks of purpura; (2) articular and peri-articular effusions—sometimes symmetrical and sometimes not; (3) attacks of abdominal pain usually associated with the other symptoms; (4) hæmorrhage from the gums and the kidneys; and (5) casual disturbance of temperature; but the notable feature of the case is that in successive attacks not all the symptoms were present. In fact, if we were to adopt the current nomenclature we should have to say that this patient had simple purpura, Henoch's purpura, and arthritic purpura successively, though it is obvious that he had but one disease variously manifested. A tendency to recurrence is seen in this patient's illness.

CASE 2.—The patient was a boy, aged 14 years. He was admitted into the Royal Free Hospital on April 15th, 1903, complaining of a rash and pains in his elbows and knees. For nearly three weeks he had been ailing and for four days he had been conscious of stiffness and discomfort in these joints; he took to his bed three days before admission to hospital and almost immediately a red rash appeared on his legs and thighs. The knees and elbows became so painful that he was obliged to go to the hospital. While waiting in the casualty department he vomited and complained of pain in his back. In his previous history there was nothing noteworthy beyond the fact that he had lately been short of food. There was no history of epistaxis or other hæmorrhagic tendency. The family history was unexceptionable but for the fact that the father was very subject to epistaxis and once had an attack lasting for three days and a younger brother had a tendency to bleed at the nose on the slightest provocation. On admission the temperature was 99·4° F., the pulse was 72, and the respirations were 28. On the feet, the legs, the thighs, and the buttocks there was a bright red petechial rash of markedly symmetrical distribution. The spots varied from scattered specks to irregular clumps; they were not raised and did not disappear on pressure; those that had faded left brown stains. The most affected areas were the buttocks and the outer side of the legs and the thighs. Over the lumbar region and in several places on the legs there was a bruised appearance and the skin quickly reddened over any point of pressure. The skin as a whole was rather moist. The right elbow was swollen and discoloured and was kept flexed to a right angle; it was painful and more so on movement; it was tender to pressure and so was the adjacent portion of the humerus. The swelling of the left elbow had gone and also the pain on movement, but a bruised area remained which was slightly tender on pressure. The right shoulder was tender to touch and painful on movement but was not swollen. The left wrist was swollen and hot and very painful and tender. Both knees were hot, flushed, swollen, and painful, particularly the left; these were held slightly flexed; the swelling was irregular and had not the outline of the synovial membrane. There was a hot and tender swelling over the anterior part of the crest of the right ilium extending down into the iliac fossa, also over the right great trochanter and the posterior part of the left iliac crest. On the front of the chest on the right side corresponding to the second, third, and fourth ribs was an extremely painful swelling, seemingly in connexion with the periosteum. The lungs were normal and there had been no hæmoptysis. The heart was normal but for a reduplicated second sound in the pulmonary area; the pulse was regular but of low tension. The tongue was clean, the gums were normal, and the teeth were good. There was loss of appetite and the bowels were constipated. The urine was of specific gravity 1025 and it contained no albumin, blood, or sugar. The spleen was not apparently enlarged but the splenic region was tender on pressure. The abdomen was rigid. On April 18th an examination of the blood showed: hæmoglobin, 68 per cent.; red cells, 3,250,000 per cubic millimetre; white cells, 60,000 per cubic millimetre; polymorphonuclears, 81 per cent.; large lymphocytes, 6 per cent.; small lymphocytes, 11 per cent.; and eosinophiles, 2 per cent. The blood was sterile. The right elbow was in the same state as on admission. The swelling and pain of the left wrist had extended to the back of the hand. The condition of the knees was unchanged. The swelling on the front of the chest had almost subsided but that over the right iliac crest and in the right iliac fossa was larger and very tender. The rash as a whole was disappearing but there were several fresh ecchymoses about the ankles. The pain had prevented him from sleeping. On the 20th, on a simple milk and soup



Showing range of temperature in Case 2.

diet, the patient had improved greatly. His elbows and knees had quite recovered. The left shoulder was swollen, particularly behind, and was very painful. There was a further petechial eruption on the left arm and about the left ankle. Salicylate of sodium was ordered in ten grain doses thrice daily. On the 21st both shoulders were swollen and very painful and there was a bluish effusion in each axilla—obviously blood. The other affected joints were all better. There was a good deal of lumbar pain but no swelling. On the 22nd the morning temperature was 100°. The rash on the left arm was more abundant and it had also appeared on the right elbow. There was a very painful swelling over the right costal margin and the knees were discoloured. In spite of this the patient felt better and took food fairly. On the 23rd the temperature had fallen but there were a fresh crop of the eruption on both knees and a painful swelling just below the insertion of the right deltoid and a similar one on the right thigh. Iron and arsenic were substituted for the salicylate and the diet was increased by cocoa and lightly boiled eggs and custard. On the 24th a painful swelling had appeared in the right temporal region and that of the costal margin was larger and more painful. On the 25th the temperature had risen to 101° during the night. The right upper eyelid was swollen and blue; the penis was much swollen and so was the prepuce. There was also effusion into the scrotum. Micturition was painless and the urine was normal. There was a painful swelling in the right side of the abdomen, apparently in the abdominal wall. Calcium chloride in five grain doses was given thrice daily instead of the iron and arsenic. On the 27th the patient had very severe pain in the abdomen; he lay with his knees drawn up and could not bear his abdomen to be touched: seven grains of phenacetin were given at once. The bowels had been opened freely on the previous day. The left eyelid was swollen and bluish. Milk and soup diet was again given. On the 28th both knees were again swollen and painful and kept semi-flexed; the abdominal pain was much better; the swelling of the eyelids and penis had disappeared. The dose of calcium chloride was increased to seven grains. On the 29th the right wrist and lower end of the ulna were swollen and painful; there was a copious eruption on both forearms and feet and on the outer side of both legs. On the 30th there was again great abdominal pain. On May 2nd there was a general improvement; there was freedom from pain and the rash and swellings were all disappearing. Blood examination showed: red corpuscles, 4,250,000 per cubic millimetre; white corpuscles, 37,000 per cubic millimetre; and hæmoglobin, 65 per cent. On the 4th he had an attack of acute abdominal pain. Three minims of morphia were injected. On the 10th there was a symmetrical eruption on the extensor surfaces of both forearms and arms, also on both buttocks and over the lumbar spine, where there was also pain. On the 14th, after the temporary relapse, there was again general improvement. On the 19th calcium chloride was replaced by nux vomica, sal volatile, bicarbonate of sodium, and chloroform water thrice daily before meals. A differential count showed: polymorphonuclears, 67 per cent.; lymphocytes, 31 per cent.; and eosinophiles, 1 per cent. From the 20th to June 5th the patient mended rapidly and was sent to Broadstairs on the latter date.

To summarise this case there were: 1. Eruptions of purpura, symmetrically placed. 2. Hæmorrhagic effusions: (*a*) about the joints, (*b*) in connexion with bones and seemingly subperiosteal, and (*c*) in the lax subcutaneous tissues. These effusions showed a tendency to be symmetrical. 3 Attacks of abdominal pain, usually contemporaneous either with the hæmorrhagic effusions or with the outcrops of purpura and therefore probably referable to like causes—i.e., extravasation. 4. Slight disturbance of temperature. This did not appear to be an integral part of the disease but rather a casual complication, depending on such causes as pain, sleeplessness, and so on. The changes in the blood were neither constant nor characteristic, but the red cells and hæmoglobin were relatively low and the white cells relatively high. No drug that was employed had any obvious effect on the course of the disease.

CASE 3.—The patient was a Jewish boy, aged 10 years. He was admitted to King's College Hospital on August 30th, 1902, complaining of red urine and abdominal pain. He had been in Guy's Hospital under the care of Sir Cooper Perry from Dec. 4th, 1901, to Feb. 1st, 1902, and the following notes were kindly supplied by the medical registrar. "He gave no previous history of purpura. He had lived most of his life in Russia. His symptoms appeared three weeks after his being vaccinated and he was admitted for hæmoptysis, abdominal pain, and a purpuric rash all over his body and limbs but particularly over the buttocks, arms, and legs. There were purpuric spots even on the soles of his feet. The chest and abdomen, head and neck were almost free. He had also hæmatemesis and hæmaturia and passed bright red blood per rectum. He was very ill for a time but improved. He had pains in his elbow-joints at one time and these joints got stiff, apparently from hæmorrhage into them, but they entirely recovered. The hæmorrhage from the rectum was the most troublesome to cure; but ultimately all purpura and hæmorrhage cleared up entirely. The diagnosis was Henoch's purpura. The blood examination in December, 1901, showed red corpuscles, 3 866 660 per cubic millimetre; white corpuscles, 11,500 per cubic millimetre; and hæmoglobin, 80 per cent. He was treated at first with calcium chloride, ten grains every six hours; later by sodium salicylate and compound powder of kino, ten grains; and ultimately with compound syrup of phosphate of iron in one drachm doses." Since his discharge from Guy's Hospital in February he had passed blood in the motions about four times and his urine was red-coloured about once a fortnight. He last noticed this on August 20th; it was followed by abdominal pain lasting about 12 hours, and he passed blood in his motions; occasionally he had pain during micturition. On admission the boy was very thin and bloodless. His temperature was 100° F. His heart, lungs, liver, and spleen were normal. The urine was of specific gravity 1012 with some blood, a large amount of albumin, some granular tube casts, and some red corpuscles. There were no eruption on the skin and no abdominal or joint pains. On Sept. 1st, after admission, he was given a dose of Epsom salts and passed one ascaris lumbricoides. On the 2nd no more worms were passed after santonin. A differential blood count showed: polymorphonuclears, 53·2 per cent.; lymphocytes, 43·2 per cent.; large uninuclears, 1·2 per cent.; and eosinophiles, 2·4 per cent. The blood was sterile. Adrenalin chloride was given in small doses thrice daily. On the 5th the patient was much improved and said that he felt quite well. With regard to the eyes, the veins were full and there was œdema of the retina along their course; there were no hæmorrhages. On the 8th there were purpuric spots on both buttocks and on the right knee and foot. On the 9th there was hæmorrhage of about half an ounce at a time in three motions. On the 10th calcium chloride was given in ten-grain doses every six hours. In the evening one ounce of blood passed from the bowel. On the 13th there was only a trace of albumin in the urine. On the 14th a group of spots appeared on the extensor aspects of the forearms. On the 15th the temperature was showing an irregular upward tendency. On the 16th there were petechiæ on the calf of the right leg; otherwise the patient was quite well. There was a trace of blood in the urine as well as the albumin; these were still present when the patient ultimately left the hospital on Oct. 7th.

To summarise this case there were: (1) symmetrical outbreaks of purpura; (2) symmetrical effusions into joints; (3) attacks of abdominal pain associated with the other symptoms; (4) hæmorrhage from the lungs, kidneys, stomach, and bowels; and (5) an irregular febrile temperature not waxing and waning with the other symptoms. A tendency to relapse rather than to recurrence is shown in the course of this case.

Harley-street, W.

A SIMPLE METHOD OF PERFORMING INTESTINAL UNION.

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IN 1899 I suggested two methods for uniting divided intestine. The paper appeared in THE LANCET of Feb 25th of that year (p. 501)[1] and was a record of experimental work

[1] The methods were described in (1) Illustrirte Rundschau der Medicinisch-Chirurgischen Technik, Jahrgang II., 2 Quartalheft; and (2) American Yearbook of Medicine and Surgery, Gould, 1900, p. 76.

carried out in Berlin. Since then I have performed experiments upon dogs with the object of ascertaining whether formalin-hardened gelatin bobbins could be used as efficient substitutes for those made with decalcified bone. (It may be stated in passing that they proved most efficient.) During these experiments the method to be described was devised as an improvement upon the first method and I venture to hope that this modification will supersede the older and make the principle of wider application.

The reproductions of two photomicrographs are shown to illustrate the effect on the intestine of this method as compared with the Czerny-Lembert method (see Figs. 1 and 2).

FIG. 1.

Condition of the bowel (in a dog) after the "bone-bobbin" operation.

The latter (Fig. 2) shows in a marked degree the annular shelving stricture so commonly found after this operation. The other shows how little interference with the finer anatomy has been produced by the "bobbin-and-ring" method about to be described.

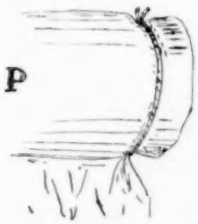
FIG. 2.

Condition of the bowel after the Czerny-Lembert operation (also in a dog).

1. The bone bobbins (see Fig. 3) are made in four sizes so that when placed in a series, as it were to form a tube, the one end has a diameter of an inch and the other one of eleven-sixteenths of an inch. The bobbins are therefore slightly conical. The sizes are not hard and fast but can be made either larger or smaller. The length of each bobbin is slightly more than its diameter. The narrow end is made a little more heavily (to permit of a deeper groove) so that the lumen of the little tube is even more conical than the outside conformation. Two objects are thus gained, firstly, the rubber ring slips more easily along the bobbin from the wider to the thinner end, and, secondly, when intestinal contents have once entered the narrower opening (the upper) there is less chance of the lumen becoming blocked, for the passage becomes progressively wider. There are three grooves in the bobbin: two at the distal end which are shallow and one at the proximal end which is deep. Beginning at the wide end the grooves may be, for convenience in description, designated *a*, *b*, and *c*. I have explained this bobbin somewhat in detail so that from the description the bobbin may be made by the bone-turner, as I

FIG. 3.

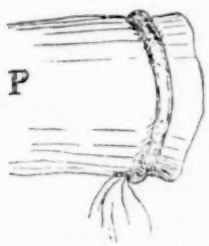
FIG. 4.



have found that there was great difficulty in getting the bobbins all made alike. Some had the grooves too narrow, some too shallow, while in other cases the heaviness of the bobbin was greater at the wider end than at the narrow. These little points are of importance, for the smooth working of the method depends upon the nicety of the mechanism. The edges are rounded. The bone is decalcified completely or partially according to opinion.

2. The bobbin is then to be inserted into the proximal end of the divided gut. (It is to be noted here that this is an

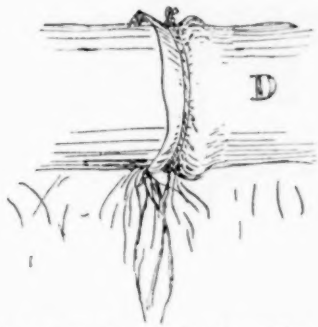
FIG. 5.



important point, for should the bobbin be mistakenly placed in the distal end the whole mechanism is upset and the bobbin will become displaced laterally and so come to act as an obstructing foreign body.) The bobbin is fixed in the intestine by a ligature which binds the intestine into groove *a* (see Fig. 4).

3. Over this ligature is placed a rubber ring similar to an umbrella ring. For the larger sizes of bobbins a light

FIG. 6.



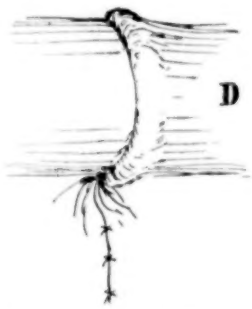
umbrella ring will be suitable; for the smaller sizes lighter rings are necessary. The ring should be tight but not so tight as to prevent it being easily placed in position (see Fig. 5).

4. The proximal end of the intestine, so armed, is then

inserted into the distal end of the gut far enough for the gut to cover the groove *b*. The distal intestine is ligatured into this groove over the proximal end in a manner similar to that by which the proximal end is fixed to the bobbin. The ligature must be tight (see Fig. 6).

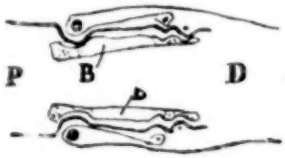
5. The rubber ring under the distal gut has then to be gently manipulated from its resting place over the first ligature in groove *a* into, and past, groove *b*. The conical shape of the bobbin favours this manœuvre and the ring glides very readily into groove *c*. Care must then be taken that the ring is not pushed beyond this groove (see Fig. 7).

FIG. 7.



The union is now completed by stitching the cut borders of the mesentery. From Fig. 8 it will be seen how the structures finally rest. Eventually all distal to the rubber ring comes away. The operation is an exceptionally easy

FIG. 8.



one to perform and takes much less time to carry out than to describe. Sutures may be put in at the junction of the peritoneal surfaces but are not to be recommended as they lead to adhesions.

Note.—In the above figures P = the proximal end of the gut and D = the distal end. In Fig. 8 B is the bobbin shown in section.

Glasgow.

ON THE VALUE OF SALINE INFUSION IN THE TREATMENT OF ENTERIC FEVER.

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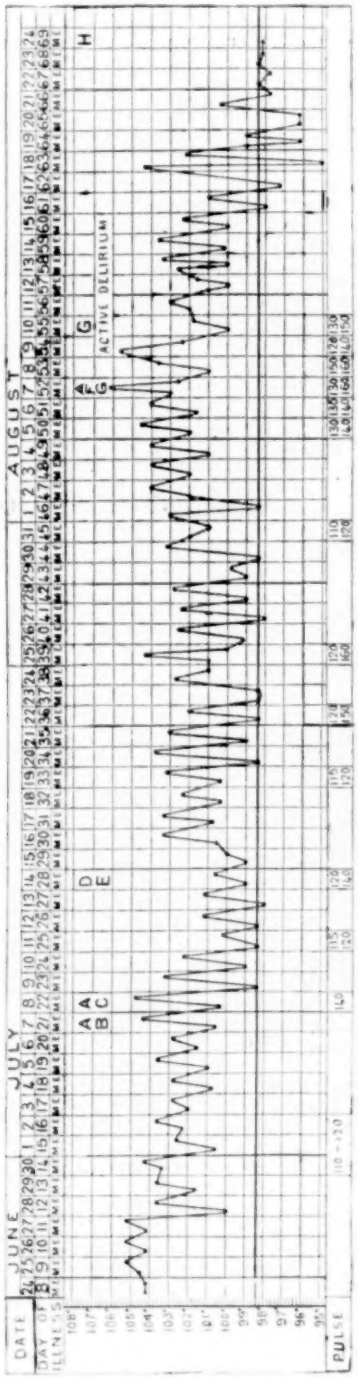
THE case here recorded shows the benefit to be derived from saline infusion, not only after hæmorrhage but in severe cases of enteric fever when during the third week of the disease the patient is in danger of dying from heart failure.

The patient, a married woman, aged 25 years, who eight weeks before had been delivered of her first child, complained of malaise from June 18th. On June 24th, when first seen, the temperature was found to be 104° F., the skin was dry, severe frontal headache was present, and the bowels were constipated. Careful examination of the blood for the malarial plasmodium gave a negative result. The patient's condition grew rapidly worse during the following days and the symptoms were so typical of enteric fever that an examination of the blood for Widal's reaction was considered unnecessary. The accompanying chart shows the progress of the case. The temperature in the early stage was kept in check by cold packing and later by sponging and the use of an ice-cradle. The early constipation was succeeded by diarrhœa which was not, however, very excessive.



A, Rigor. B, Injection of 20 ounces of saline fluid. C, Injection of 25 ounces of saline fluid. D, Severe hæmorrhage. E, Injection of 25 ounces of saline fluid at noon and also at 11 P.M. F, Injection of 30 ounces of saline fluid. G, Bloody stools. H, After this date the temperature remained normal till Sept. 1st when it began to rise and on Sept. 4th was 106° F.; it then declined gradually and became normal about Sept. 12th, after which the patient's recovery was uninterrupted.

On July 7th the patient's condition was serious, there was a severe rigor, the temperature was 105°, the heart sounds were very weak, and the pulse was almost imperceptible at the wrist. After a consultation it was decided that as the patient was evidently sinking from heart failure and there was no response to any of the ordinary cardiac stimulants the injection of saline fluid might be tried. 20 ounces were injected into the areolar tissue round the right breast at 11 P.M.; this was followed by some improvement in the pulse and the patient passed a fairly restful night. On the 8th she had a rigor, the temperature was 105°, and the pulse was very feeble. 25 ounces of fluid were injected. From the 9th to the 14th the condition improved, but on the latter date there was profuse hæmorrhage from the bowel, followed by profound collapse, with a pulse of 140. 25 ounces of fluid were injected at noon and at 11 P.M. There was some improvement up to July 29th, the temperature daily approaching the normal. On the 30th a relapse set in and on August 9th I was hurriedly summoned and found the patient suffering from a severe rigor. The temperature was 106·2° and the pulse was 160, intermittent, and could be counted with difficulty at the wrist; 30 ounces of fluid were injected. During the 9th and 10th the stools were tinged with blood. For a week after this the condition was critical. The patient was delirious, with a soft dicrotic pulse ranging from 130 to 160. On the 17th, at 2 A.M., the temperature was 104·2°, and falling gradually during the day was 95° at 6 P.M. It was feared that this might mean a recurrence of the hæmorrhage, but the character of the pulse (from 110 to 120, fairly full and regular) justified a favourable prognosis. On the 22nd the temperature for the first time was normal all day and continued so till Sept. 1st, when another relapse set in which lasted for 12 days. After this the patient made an uninterrupted though slow recovery. The general treatment throughout was fresh chlorine water and other intestinal antiseptics, sulphuric acid and opium to restrain the diarrhœa, and when hæmorrhage occurred chloride of calcium in 20-grain doses.

There is no doubt that the patient's life was saved by the saline injections and as I think others may adopt this method of treatment in similar cases a description is appended of the method of injection, showing how easily it is done without any special apparatus. To one end of a piece of No. 3 india-rubber tubing about three feet long a Southey's trocar and cannula were attached, the other end being tied to the nozzle of an ordinary two-ounce glass male syringe from which the piston had been removed. The whole was rendered aseptic by immersion in a solution of biniodide and subsequent flushing with hot sterilised water. The fluid was prepared by adding salt to water boiled in a tin kettle, brought to boiling point, and cooled to 100° F. It was introduced into the areolar tissue round the breast, the time occupied for 25 ounces being about ten minutes, only one insertion of the cannula being necessary on each occasion. An assistant holding the syringe uncovered in his left hand kept it about two-thirds full from the kettle held in his right hand. There are several advantages in this method, the most important being (1) the amount of fluid in the syringe can easily be seen; (2) by raising or lowering it the pressure can be increased or diminished; and (3) by firmly holding the syringe the temperature of the fluid is kept at, or about, blood heat. Any diminution in the temperature is at once noted and can be rectified by passing the kettle a few times over the flame of a spirit or paraffin lamp.

As a proof that, with ordinary precautions, there is little risk of local trouble in the above procedure it may be noted that in this case, although it was carried out five times (almost a gallon of fluid being injected), there was never at any time the least sign of irritation at the seat of injection.

THE POOR CHILDREN'S DINNER FUND.—His Majesty the King has sent a donation of £10 10s. to Sir William Treloar's Fund for entertaining poor children at the Guildhall (kindly lent by the Corporation of the City of London) and for sending 6000 Christmas hampers to poor crippled children. This is the tenth year of the fund and the King has subscribed annually to it.

LONDON SCHOOL OF TROPICAL MEDICINE.—The entry of students at the London School of Tropical Medicine is the largest on record. About 30 post-graduate students have already joined for the autumn session, nearly half being sent from the Colonial Office, Foreign Office, and Indian Medical Service.

THE VALUE OF BLOOD EXAMINATIONS IN ABDOMINAL DISEASES.

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THE results of hæmatological examination have been so satisfactory in the hands of those who practise it that an endeavour to extend the use of the method seems justified. The instruments required are (1) a suitable microscope, the best kind being that with a mechanical stage; (2) a Thoma-Zeiss hæmocytometer; (3) clean cover slips and slides; (4) a surgical needle; and (5) Toison's fluid and Jenner's stain. Even spreading of a blood film depends even more on the cleanliness of the cover slips than upon the dexterity of the maker. I clean them by boiling for 15 minutes in a solution of bichromate of potassium and sulphuric acid, washing in distilled water and alcohol, and keeping them in absolute alcohol. Toison's fluid is made up as follows: chloride of sodium, one part; sulphate of sodium, eight parts; glycerine, 30 parts; methyl violet, 0·025 part; and distilled water, 160 parts. This fluid should be frequently filtered. Jenner's stain is a solution of a salt of methylene blue and eosin in methylic alcohol. It has the advantage of fixing as well as double staining the film.

The lobule of the ear is perhaps the most accessible and convenient situation from which to obtain the few drops of blood required. After cleansing the skin with ether the lobule is punctured with a surgical needle. The first drop of blood which appears is wiped away. The ear must on no account be squeezed in order to force out the blood. A second drop of small size is then allowed to adhere to the centre of a cover slip. On this a second slip is rapidly placed so that the drop of blood spreads out into a thin film between their two opposed surfaces. The two slips are then rapidly drawn asunder and the film is set apart to dry. A third drop is then allowed to run up the capillary red-counting pipette to the mark 0·5. Having obtained the exact quantity the conical end of the pipette is wiped free from blood and plunged below the surface of the Toison's fluid which is sucked up into the bulb to the mark 101. While doing this it is advisable to rotate the pipette on its long axis between the finger and the thumb to insure more thorough mixing of the blood with the fluid. This manœuvre results in obtaining a dilution of 1 in 200 of the patient's blood. In cases where the leucocytosis is probably slight the blood may with advantage be drawn up to the mark 1·0 in order to obtain a dilution of 1 in 100. The patient's ear may then be wiped clean and a wisp of cotton-wool may be applied to stop the bleeding. The rest of the examination may be performed away from the patient. The blood and fluid in the pipette are thoroughly mixed by shaking and an indiarubber band stretched over its ends affords an efficient protection against leakage or evaporation if the count cannot be at once performed. A drop of suitable size is then transferred to the counting chamber and a glass cover slip is applied. The corpuscles must then be allowed a few minutes to settle on the floor of the chamber. The interval may well be employed in cleaning the pipette. Some distilled water is drawn into the bulb and well shaken. This is replaced by some sulphuric acid and the pipette is again thoroughly washed with distilled water. After rinsing out with ether a final wash with absolute alcohol is given and the pipette is dried by sucking through it some hot air. It is most essential to prevent any trace of mucus or saliva reaching the pipette. This can be efficiently done by blowing down a glass tube containing a pledget of cotton-wool and a small connecting piece of rubber tubing. During the five minutes occupied in clearing the pipette the corpuscles will have settled in the chamber. The red cells are then seen to be of a faint yellowish colour and the leucocytes to be stained a deep purple colour and somewhat highly refractile. I have been in the habit of counting three sets of 16 squares each in obtaining the number of red cells. To insure greater accuracy more squares should be counted and more than one drop of the mixture. For the purposes of this investigation, however, the number of red cells is of secondary importance, and I found that 48 squares counted gave a sufficiently accurate result for my purpose. The number of cells in the

TABLE I.—SHOWING BLOOD COUNTS IN CASES OF APPENDICITIS.

No. of case.	Date.	Sex.	Age (years).	Red corpuscles.	White corpuscles.	Differential count percentages.				Remarks.
						Polymorphonuclears.	Lymphocytes.	Hyaline cells.	Eosinophiles.	
1	March 17th.	M.	38	5,060,000	62,500	85·4	5·6	8·4	0·6	Appendix was gangrenous.
	April 16th.			3,916,000	15,150	—	—	—	—	—
	,, 25th.			4,662,000	12,500	62·0	29·6	6·0	2·4	—
2	March 31st.	F.	31	5,165,000	16,750	57·0	31·3	10·7	1·0	Chronic inflammation with a small ulcer.
3	April 4th.		34	5,500,000	11,000	69·0	23·6	5·2	2·2	Chronic catarrhal appendicitis.
4	,, 4th.		31	5,110,000	26,000	83·0	9·8	6·0	0·2	Stercolith with foul abscess.
	,, 20th.			4,083,000	23,750	—	—	—	—	Fæcal fistula.
	May 3rd.			4,064,000	10,900	—	—	—	—	Healed.
5	April 5th.	F.	21	4,060,000	9,375	60·8	25·2	11·2	2·8	Pain subsided; no operation.
6	,, 18th.	M.	23	5,928,000	6,250	54·8	34·0	8·0	3·2	—
	May 1st.			—	13,980	—	—	—	—	The temperature rose to 100° F.
	,, 10th.			4,960,000	10,170	—	—	—	—	Operation; much matting; no pus.
	,, 18th.			4,496,000	7,310	—	—	—	—	—
7	March 15th.	M.	30 (?)	5,060,000	6,200	—	—	—	—	No operation; colic (?).
8	April 20th.	M.	51	5,344,000	11,250	77·0	17·4	4·8	0·8	—
	,, 22nd.			—	11,480	—	—	—	—	Appendix extensively ulcerated; no pus.
	,, 24th.			—	14,060	—	—	—	—	—
9	,, 21st.	M.	13	4,883,000	14,500	69·0	17·0	12·0	2·0	—
	,, 28th.			4,560,000	17,100	—	—	—	—	Tuberculosis of the appendix, with caseating mesenteric glands.
	May 2nd.			4,478,000	10,000	—	—	—	—	—
	,, 10th.			4,332,000	7,900	—	—	—	—	—
10	April 22nd.	F.	16	3,900,000	9,375	60·2	31·8	7·0	1·0	No peritonitis; no pus; minute ulcer and stercolith.
11	,, 24th.	F.	23	4,112,000	6,500	—	—	—	—	—
	May 1st.			—	7,950	—	—	—	—	No operation.
12	,, 6th.	F.	21	3,664,000	7,150	—	—	—	—	Very slight catarrhal inflammation.
13	April 24th.	F.	28	4,366,000	25,000	85·0	8·0	6·0	1·0	—
	,, 25th.			4,264,000	27,300	—	—	—	—	Appendix long and gangrenous.
	May 1st.			—	29,250	—	—	—	—	—
	,, 3rd.			—	—	—	—	—	—	Abscess evacuated.
	,, 8th.			4,032,800	14,300	—	—	—	—	—
	,, 18th.			5,000,000	6,360	—	—	—	—	Healed.
14	,, 9th.	F.	30	4,984,000	36,570	85·0	6·6	7·6	0·8	Appendix partially gangrenous; patch of gangrene on cæcum; no pus.
	,, 13th.			5,010,000	17,880	—	—	—	—	—
	,, 21st.			4,976,000	11,450	—	—	—	—	Healed.
15	,, 17th.	M.	9	4,432,000	18,440	91·0	3·8	5·8	0·4	General peritonitis; sero-pus and lymph; no stercolith found; died.
	,, 18th.			—	19,080	—	—	—	—	—
16	,, 7th.	F	31	4,320,000	35,900	89·2	5·6	4·8	0·4	Extensive foul abscess.
	,, 11th.			4,410,000	25,260	—	—	—	—	Discharge plentiful.
	,, 18th.			3,552,000	19,710	—	—	—	—	—
	,, 30th.			—	8,587	—	—	—	—	—
	June 11th.			3,960,000	10,170	56·4	33·5	8·0	2·1	Healed.
17	,, 2nd.	M	11	5,330,000	29,520	82·6	10·0	7·0	0·4	Stercolith; perforation; abscess; death.
18	May 30th.	M	11	4,320,000	16,220	77·6	12·6	9·6	0·2	Two days after operation; large abscess.
	June 6th.			4,450,000	11,767	—	—	—	—	—
19	May 29th.	M.	24	4,235,000	13,995	83·0	12·0	5·0	0·0	—
	,, 31st.			4,150,000	8,600	—	—	—	—	Small abscess with thick walls.
	June 7th.			4,830,000	15,302	—	—	—	—	Much discharge.
	,, 12th.			4,715,000	13,300	—	—	—	—	—
	,, 24th.			4,423,000	21,870	80·4	9·4	10·2	0·0	Pleurisy at the right base.
20	,, 16th.	M.	21	4,568,000	11,150	46·0	42·0	7·6	4·4	Catarrhal appendix; fleshy adhesions.
21	,, 16th.	M.	28	5,100,000	9,540	57·8	29·0	9·2	4·0	Soft stercolith; no ulceration.
22	,, 18th.	M	28	5,330,000	21,400	82·6	11·0	6·4	0·0	—
	,, 16th.			—	19,718	—	—	—	—	Appendix gangrenous; operation was performed on the 17th.
	,, 25rd.			—	20,670	—	—	—	—	—
	,, 27th.			5,000,000	28,940	—	—	—	—	The temperature rose to 102° F. on the 26th; it fell on the 28th. Discharge of pus from the wound.
23	,, 21st.	F.	26	5,500,000	6,500	69·0	22·8	7·0	1·2	Old catarrhal inflammation.
24	,, 25rd.	M.	49	5,980,000	24,600	75·4	16·8	7·0	0·8	Large subcæcal abscess opened on the 25th.
25	,, 26th.	M	55	4,500,000	18,760	84·5	5·0	9·0	1·0	No pus. The appendix was gangrenous in its distal half.

TABLE I.—SHOWING BLOOD COUNTS IN CASES OF APPENDICITIS—*(continued)*.

No. of case.	Date.	Sex.	Age (years).	Red corpuscles.	White corpuscles.	Differential count percentages. Polymorphonuclears.	Lymphocytes.	Hyaline cells.	Eosinophiles.	Remarks.
26	May 19th.	M.	32	5,016,000	32,334	85·2	7·6	6·8	0·4	Acute appendicitis with abscess.
	,, 22nd.			4,833,000	15,266	—	—	—	—	—
	,, 28th.			5,000,000	12,723	—	—	—	—	—
	June 6th.			4,000,000	11,130	60·0	30·2	8·0	1·8	Healed.
27	,, 28th.	M.	12	5,430,000	34,920	87·4	7·2	5·0	0·4	Large foul abscess; the appendix was not seen.
28	,, 29th.	M.	45	5,067,000	19,080	82·6	9·0	7·6	0·8	Large thick-walled foul abscess.
29	,, 13th.	M.	23	5,260,000	18,500	80·6	10·0	9·4	0·0	—
	,, 14th.	9.30	A.M.	5,216,000	16,220	—	—	—	—	—
	,, ,,	8.0	P.M.	—	18,784	—	—	—	—	—
	,, 15th.			—	—	—	—	—	—	The appendix was found to be acutely inflamed; drops of pus.
	,, 27th.			5,500,000	19,080	79·4	11·0	9·6	0·0	—
30	,, 30th.	F.	14	4,567,000	28,280	84·2	9·8	7·6	0·4	Much recent peritonitis, with matting; small pocket of pus.
31	,, 14th.	M.	34	4,900,000	14,987	84·6	8·2	6·6	0·6	Much recent inflammation round appendix; no pus.
	,, 26th.			—	11,250	66·0	23·0	9·0	2·0	—
32	,, 28th.	M.	40 (?)	4,900,000	41,340	91·2	3·2	5·6	0·0	General peritonitis; death.
33	,, 11th.	M.	28	5,800,000	23,530	86·8	7·2	5·6	0·4	Acute appendicitis; sero-pus; mucous membrane gangrenous.
	,, 12th.			5,617,000	25,125	—	—	—	—	The temperature rose to 102° F.; bronchitis.
	,, 14th.			5,150,000	19,920	—	—	—	—	—
	,, 23rd.			4,900,000	11,560	—	—	—	—	Discharge.
	,, 29th.			4,620,000	9,850	70·0	19·0	8·0	3·0	Healthy granulations.
34	,, 27th.	F.	11	3,916,000	29,259	92·0	3·6	4·4	0·0	General peritonitis; sero-pus not offensive; the right tube and ovary were acutely inflamed.
35	April 22nd.	F.	21	3,300,000	25,750	75·6	19·0	5·0	0·4	—
	,, 23rd.			—	31,000	—	—	—	—	Large pyosalpinx removed.
	,, 27th.			3,384,000	21,150	84·0	10·0	5·4	0·6	Discharge; fæcal fistula.
	May 8th.			3,760,000	17,170	—	—	—	—	—
	,, 18th.			4,000,000	14,620	—	—	—	—	—
	June 5th.			4,230,000	8,900	52·2	33·4	10·8	3·6	Wound healed soundly.
36	,, 12th.	F.	24	4,067,000	29,910	92·6	4·8	2·4	0·2	Sero-pus not offensive; pelvic peritonitis; right ovary acutely inflamed and suppurating.

48 squares divided by six and multiplied by 100,000 gives the number per cubic millimetre in the blood.

In counting the number of white cells the method which is generally adopted is as follows. They are easily differentiated by the purple stain and their refracting character. An objective about $\frac{1}{6}$th or a Zeiss D is used with a low eyepiece. The ruled lines on the slide are then sought and the draw tube of the microscope is pulled out until the diameter of the field exactly corresponds to eight squares. The cubic contents of the field in view can then be easily calculated by the ordinary formula for finding the capacity of a cylinder, since the depth of the chamber is $\frac{1}{10}$th of a millimetre and each square is $\frac{1}{20}$th of a millimetre across. Taking 11 as $\frac{22}{7}$ the cubic contents of the field will be $\frac{22}{7} \times \frac{4}{20} \times \frac{4}{20} \times \frac{1}{10} = \frac{352}{7000} = \frac{44}{875}$. If then we count 50 fields and find an average of one cell per field we find that one cubic millimetre of the mixture contains 79·54 white cells; as the dilution was 1 in 200, the number of leucocytes per cubic millimetre of blood works out at 15,908. This method is quicker and more accurate than counting the leucocytes by means of the squares. The actual counting and calculation do not take more than a few minutes. Having thus found the numbers of red and white cells the films must be stained by means of Jenner's stain in order to arrive at a differential count of the leucocytes.

The four ordinary varieties met with are (1) polymorphonuclears (an irregular deeply staining nucleus with fine neutrophile granules); (2) lymphocytes (a small with deeply staining spherical nucleus and a little protoplasm); (3) hyaline cells (a large pale blue indented nucleus); and (4) eosinophiles (a pale blue nucleus, often double; large eosinophilous granules). Basophiles are so rarely met with that I have not taken them into account. 500 consecutive leucocytes are then counted, half on each film, and the percentages are arrived at. In the few cases where the hæmoglobin was estimated Haldane's method was employed. Having thus arrived at a result of the blood examination, what can we draw from it? The basis of the matter is the fact that an increase of leucocytes accompanies acute inflammation. Typhoid fever at once occurs to our minds as an exception. Putting that aside leucocytosis is a sign of acute inflammation provided that (1) the resistance of the patient is capable of reaction; and (2) the intensity of the infection is capable of exciting reaction. The outcome of these factors means that a large leucocytosis will be provoked where the patient is in a high state of resistance and the infection is severe, while a patient in a low state of resistance will in the same circumstances exhibit but a feeble leucocytosis. The balance of these factors may later be of value in determining the prognosis of a case. I am not prepared to state that any definite relation exists between the amount of the leucocytosis and the intensity of the infection, but we can work upon the hypothesis that leucocytosis is the expression of nature's effort to counteract toxæmia.

In describing the effect on the blood generally it will be best to take each element in turn. I have not devoted any particular attention to the red cells or the amount of hæmoglobin. Da Costa, however, who investigated this question, came to the conclusion that in the average acute case there was a loss of 500,000 red cells and 30 per cent. hæmoglobin. The thickness of the fibrin network is, I believe, generally increased, but I cannot speak on this point from my own observation. The number of blood platelets is also increased; although I never counted them my impression is that I have seen more of them in cases with a large leucocytosis. The greatest alteration is found in the white cells. The normal number may be taken as 7500, of which from 60 to 75 per cent. are polymorphonuclears, from 20 to 30 per cent. are lymphocytes, from 4 to 8 per cent. are hyaline cells, and from 1 to 3 per cent. are eosinophiles. The great increase of the total number is of course the most prominent feature of the blood picture; almost equal in importance is the increase of the polymorphonuclear element; and, thirdly, the diminution of the eosinophiles and lymphocytes. The hyaline cells about keep their place. The polymorphonuclears

and hyaline cells are the most active phagocytes in the blood.

In the accompanying table of blood counts in cases of appendicitis (Table I.) it was found on taking the averages of the acute and of the more or less chronic cases that the leucocytosis of the 22 acute cases averaged 27,990, of which 84·9 per cent. were polymorphonuclears and 0·4 per cent. were eosinophiles. Of the 14 subacute and chronic cases—I take the pathological condition as the basis of classification—the average leucocytosis was 10,614, of which 63·1 per cent. were polymorphonuclears and 2·1 per cent. were eosinophiles. The average count of five acute cases after operation and just before leaving the hospital was as follows: white corpuscles, 10,500; polymorphonuclears, 60·1 per cent.; and eosinophiles, 2·5 per cent.; or a condition almost exactly similar to the chronic cases.

There are certain special factors which have to be taken into consideration. Firstly, the influence of age. An analysis of the 22 acute cases gives the following results:—

TABLE II.—*Showing the Influence of Age upon Leucocytosis.*

Age.	No. of cases.	White corpuscles.	Polymorphonuclears (per cent.).	Eosinophiles (per cent.).
Up to 20 years ...	6	26,100	85·8	0·3
From 20 to 30 years	8	24,320	85·9	0·35
,, 30 to 40 ,,	5	39,610	86·8	0·32
Over 40 years	3	21,160	80·8	0·8

The number of cases is, of course, too small for these results to be of much value, but so far as it goes the table shows that leucocytosis is most free between the ages of from 20 to 40 years and diminishes after 40 years. The physiological influence of age on leucocytosis is marked in the early months of life. At birth the number averages 18,000, sinks to 12,000 at the sixth month, and reaches the normal about the fifth year. The normal percentage of polymorphonuclears in infants is from 28 to 40 per cent. Marked leucocytosis also accompanies the later stages of pregnancy. An increase of from 2000 to 3000 leucocytes may occur after a large meal or exercise in a healthy adult.

Reference must be made to cases where there is little or no leucocytosis although the lesion is severe. First, there is a class of case in which the toxæmia is so intense that the reaction of the patient is overwhelmed. This class of case must, I think, be rare. Case 15 may, perhaps, be regarded as an example, as the lesion was very acute and extensive and the patient was a pale, ill-nourished boy, nine years of age. Secondly, a thick wall of inflammatory material surrounding a collection of pus may prevent the escape of the toxins which in some way cause the increase in the number of leucocytes. But in these cases valuable information may be gained from the differential count, a high percentage of polymorphonuclears indicating the possible severity of the lesion. Case 19 is a good example of this. The leucocytosis was only 14,000 on admission but 83 per cent. were polymorphonuclears. The count sank to 8600 in two days but on operation a small thick-walled abscess was discovered. In Case 31, however, where the blood picture was much the same, no pus was discovered but the parts were the seat of considerable recent inflammation.

Other cases which I might refer to are Cases 8 and 13.

TABLE III.—SHOWING BLOOD COUNTS IN VARIOUS ABDOMINAL AFFECTIONS.

No. of case.	Date.	Sex.	Age (years).	Red corpuscles.	White corpuscles	Differential count percentages.				Remarks.
						Polymorphonuclears.	Lymphocytes.	Hyaline cells.	Eosinophiles.	
1	May 2nd.	F.	11	4,800,000	12,400	54·0	31·8	7·4	6·8	Tuberculous peritonitis, with fluid; ascaris lumbricoides was passed.
	,, 10th			4,640,000	7,950	—	—	—	—	—
2	April 25rd.	M.	16	5,544,000	10,500	70·0	23·0	6·4	0·6	Tuberculous peritonitis, with fluid; chest clear.
	May 6th.			3,840,000	7,632	—	—	—	—	—
3	,, 23rd.	M.	7	3,500,000	8,270	52·0	35·0	12·2	0·8	Tuberculous peritonitis, with fluid; chest clear; hæmoglobin = 60 per cent.
	,, 28th.			4,003,000	8,580	—	—	—	—	Colour index 0·85.
4	Feb. 20th.	F.	17	—	20,000	75·0	20·0	4·0	1·0	Tuberculous (?) infection of mesentery, with pockets of pus.
5	April 17th.	F.	25	3,983,000	20,000	—	—	—	—	Suppurating tuberculous gland in the front of the kidney.
	,, 23rd.			—	16,500	60·0	25·0	11·0	4·0	—
	May 3rd.			4,600,000	13,650	—	—	—	—	—
6	April 21st.	M.	13	4,885,000	14,500	69·0	17·0	12·0	2·0	Tuberculosis of appendix, with caseating mesenteric glands.
	,, 28th.			4,550,000	17,100	—	—	—	—	—
	May 2nd.			4,478,000	10,000	—	—	—	—	—
	,, 10th.			4,332,000	7,900	—	—	—	—	—
7	June 28th.	F.	30	4,400,000	7,310	62·4	23·6	8·2	5·8	Hæmoglobin was 84 per cent.; colour index was 0·95; hydatid cyst.
8	May 20th.	M.	35	3,880,000	18,440	78·4	11·2	9·0	1·4	Suppurating hydatid of the liver.
9	,, 7th.	M.	25 (?)	5,000,000	22,950	—	—	—	—	Perforated gastric ulcer; count taken six hours after sudden onset of abdominal pain.
10	June 7th.	F.	35	3,815,000	20,350	77·4	16·4	6·0	0·2	Hæmoglobin was 42 per cent.; colour index was 0·75; small abscess in connexion with carcinoma of the stomach.
11	May 6th.	F.	57	3,760,000	14,300	80·2	11·0	8·0	0·8	Mass round uterus; amputation of the breast was performed ten hours previously; inflammatory or malignant.
	,, 11th.			3,910,000	10,100	—	—	—	—	—
12	,, 13th.	F.	28	5,032,000	10,250	65·6	24·0	8·4	2·0	Question of infective cholecystitis (?)
	,, 17th.			—	6,300	—	—	—	—	—
13	Feb. 22nd.	F.	16	3,240,000	25,000	70·0	10·0	15·4	4·6	Question of malignant endocarditis, with splenic infarct or subphrenic abscess; no necropsy was allowed.
	March 10th			3,900,000	25,000	76·6	16·0	6·6	0·8	—
	,, 27th.			3,940,000	28,125	—	—	—	—	—
	April 4th.			—	25,000	—	—	—	—	—

In the former, that of a spare man aged 51 years, the leucocytosis never rose above 11,500 and yet although there was no pus there was most extensive ulceration of the appendix. The clinical symptoms seemed to accord with the result of the blood examination. Case 13 is interesting. The girl was admitted to hospital in no very serious condition from the clinical point of view. The leucocytes numbered 25,000 with 85 per cent. of polymorphonuclears; on the next day they were 27,300 and on operation a long and gangrenous appendix was removed. The temperature fell, the wound healed, the bowels were opened, and no pain was felt. The clinical picture was in all respects highly satisfactory. Yet nearly a week after the operation the leucocytes were 29,250. The evacuation of a deep collection of pus a few days later explained this apparent anomaly. Perhaps Case 25 may be noticed as an example of the influence of age.

Table III., showing blood counts in various abdominal affections, presents some interesting points. In Case 1 the somewhat high eosinophile count was probably caused by the presence of worms. In the first six cases, which were tuberculous in character, the number of lymphocytes is rather high. Cases 7 and 8 are high in eosinophiles which is said to be the distinguishing feature of the blood in hydatid cases. Case 9 is particularly interesting. The man was seized with sudden abdominal pain about 1.30. He was admitted to hospital in a very collapsed state and remained so for three hours; he then vomited slightly twice and there was a streak of blood in the vomit. The pulse rose from 80 to 100. The abdomen was rigid but not tender and there was some diminution in the hepatic dulness. At 6.30 reaction began to set in. At 7.30 I counted his blood but unfortunately omitted to make any films. The leucocytes, however, numbered 22,950. The abdomen was opened at 8.15 and free fluid and a little gas were found; there was no lymph but the peritoneum was infected. A perforation of the stomach was found. The interest of this case is the fact that the leucocytosis occurred with such rapidity.

In conclusion, I must express my indebtedness to the medical and surgical staff of St. George's Hospital for their kindness in placing their clinical material at my disposal. I hope that the tables will serve as an illustration of the value and the shortcomings of blood examinations in abdominal diseases. I think that we cannot regard a leucocytosis as an absolute and infallible indication of the presence of pus, but as an indication of toxæmia its value appears to me very great. Although I do not think it possible at present to fix any definite relationship between the amount of the leucocytosis and the intensity of the toxæmia, yet the broad fact remains that an increasing leucocytosis is, other things being equal, the most scientific means at our disposal for gauging the increasing virulence of an appendicular infection. On the other hand, a decreasing leucocytosis is evidence of decreasing virulence or walling off of the toxic products.

I cannot do better than sum up the practical moral in the words of da Costa: "The surgeon who attempts to use the blood count in appendicitis as a definite pathognomonic sign will soon run afoul of diagnostic disasters; but he who regards it as only a symptom invariably to be correlated with other equally, if not more, important clinical manifestations cannot fail to find this method of inquiry of signal value in routine clinical surgery."

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

AN UNUSUAL VESICULAR ERUPTION.

BY JOHN REID, M.A., M.D., C.M. ABERD.

IN February, 1902, I saw a young man who was supposed to be suffering from herpes of the face following influenza. There were a few vesicles about his neck, and the influenza—now bronchitis only—soon disappeared. The young man was of a healthy family and he had up to this date had no illness whatever. As the rash continued to spread over the body and extremities in the shape of vesicles or bullæ some were three inches long and about half an inch wide the disease was treated with antiparasitic remedies. The fluid of the vesicles was clear and it never contained pus at any stage; even after the vesicles were pricked they never produced pus. They dried up into scabs or scales. The large raw surfaces on the abdomen and other parts of the body made life uncomfortable for the patient whose health otherwise was good. The patient worked in a dairy and had much to do with chaff-cutting, the straw in many cases being described by him as containing "smut." The vesicular fluid, dried and examined under the microscope, also undried, contained what appeared to me to be *uredines*, or very like the growth obtained by me in November, 1885, from growing rust from wheat in connexion with a pneumonia epidemic. The disease improved by the treatment but was very stubborn.

Southfields, S.W.

SPONTANEOUS CURE OF AN UMBILICAL FÆCAL FISTULA.

BY GOPAL R. TAMBE, M.A., B.Sc., L.M. & S.,
STATE SURGEON, INDORE.

ON June 14th a man, aged 45 years, a Mahomedan, came under my care at the Maharajah Tukoji-Rao Hospital in Indore, Central India. He suffered from a fluctuating tumour at the umbilicus, which latter bulged out for a distance of one and a half inches from the abdominal wall and presented a small opening surrounded by exuberant granulations. On gentle pressure being made a drop of purulent discharge escaped from the opening. I therefore afterwards administered chloroform and cautiously opened the abscess on a director, when to my surprise I found three solid masses resting on the floor of the cavity. Much pus was washed out and the cavity was stuffed with iodoform gauze. Further examination of these three masses under the microscope and otherwise showed that they consisted of fæcal matter and had apparently escaped from a fæcal fistula which had subsequently become closed. The history given by the patient was that the abscess had been of a month's duration and that previously to noticing it he had not experienced the slightest trouble or inconvenience. Considering the risks habitually involved in perforation of the intestine and the great amount of care and attention required in surgical operations on the intestine, the cure imperceptibly effected by natural processes in this case is remarkable.

Indore, Central India.

NOTE ON THE INTERNAL ADMINISTRATION OF FORMALIN IN CASES OF PUERPERAL FEVER.

BY CHARLES STEELE, M.D. DURH., F.R.C.S. ENG.

SOME time ago I saw a note of seven cases of puerperal fever having been treated by hypodermic injections of formalin with remarkable and rapid recoveries. I decided to try the method in any suitable case, but as I saw no detailed statement on the subject in the medical journals I was careful to use the drug only in small doses. The following are the results.

CASE 1.—The patient, the mother of three children, a delicate woman and very susceptible to the influence of drugs, miscarried on Feb. 4th, 1903, being in fair health at the time and only six months pregnant. The conjectures offered to me as to the cause of this occurrence at such an unusual period did not satisfy me; with this exception, that she had slipped off her chair and suddenly bent forwards a few days before it took place. She did well for a week and then had a rigor followed by a temperature of 102° F., slight odour in the lochia, and pain in her uterus. I prescribed one minim each of formalin and tincture of aconite in an ounce of water, every hour at first, gradually lengthening the intervals as improvement took place. She liked to take this medicine as it gave a comfortable, warm sensation in her stomach, spreading through the abdomen and the system and induced a cheerful feeling of its "doing good." The above-mentioned attack I gathered to be due to undue exposure when attending to the needs of the system. Steady progress took place; a slight relapse occurred after two weeks but soon yielded to treatment. Weakness was felt for altogether five weeks but

complete recovery took place. She was reluctant to give up the formalin on account of the comfort which it induced.

CASE 2.—The patient, who was the mother of a boy, two and a half years old, was confined at full term after four hours of steady labour on May 13th, 1903, and did remarkably well for four days. On the afternoon of the fifth day her husband came to tell me that she had a rigor and a temperature of 104° F. and that she looked very ill. I went at once and found the temperature to be 106°, the pulse 120, and the respirations 36. The lochia were normal and lactation was uninterrupted. No cause for the attack could be found. She had an excellent nurse. There were profuse saturating perspiration and severe headache; her lips were blue and on the next day the finger-tips were blue also. Three grains each of antifebrin and antitoxin were administered every hour until the temperature dropped, then these drugs were given less frequently. I also gave one minim of formalin in an ounce of water every half hour at first and then every hour. It should be mentioned that five days after her first confinement she had a slight feverish attack which yielded quickly to a few doses of Dover's powder (five grains) and also that about a year previously she had an extremely prostrating attack of influenza which depressed the action of the heart to an anxious extent, but from which she steadily recovered.

This patient expressed just the same feeling of comfort and warmth in the stomach, spreading through the abdomen and the system and making her feel altogether better, as did the previous patient. There was no cough, bronchitis, pleurisy, or pneumonia, or any other mischief. The urine was condensed for a few days owing to the free perspiration, but it was otherwise normal as were also all the functions, including the nursing of the child, which was carried on without injury to herself or the baby. She is now (July) perfectly well. On the second day I went prepared to inject antistreptococcic serum, but was thankful to find it unnecessary, as the remedies which I have described had sufficed.

Clifton.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., *Proœmium*.

BOLINGBROKE HOSPITAL, WANDSWORTH COMMON.

A CASE OF PERFORATED DUODENAL ULCER; OPERATION; SUBSEQUENT DEVELOPMENT OF SUBHEPATIC ABSCESS; RECOVERY.

(Under the care of Mr. HAROLD BURROWS.)

THE patient, a man, aged 24 years, was admitted to the Bolingbroke Hospital on March 4th, 1903, with symptoms of perforative peritonitis. On the previous night at about 11.30 he was playing billiards and as he stooped down to make a stroke he was seized with a sudden severe pain in the right hypochondrium. He felt sick and faint and was given some brandy which neither increased the pain nor made him feel better. Shortly after this the patient began to retch and to vomit, these symptoms, together with severe pain in the abdomen, continuing up to the time of the operation; in fact, the vomiting was so frequent that a diagnosis of intestinal obstruction had been suggested. The patient's last meal before the onset of the attack had been at 6 P.M., five and a half hours previously, and had consisted only of three cracknel biscuits and some tea. He stated that he had always enjoyed good health except for indigestion, from which he had suffered for years. He described it as pain or "a feeling of weight on the stomach" coming on about one and a half hours after a meal and always relieved for a time by taking more food. On examination in the ward the patient was evidently in acute pain. He was lying on his back with the legs extended; his expression was one of great anxiety and he was hiccoughing and frequently retching. The abdomen showed the usual characters of general peritonitis with these special points—viz., the pain and tenderness were most marked in the right hypochondriac region, rigidity of the abdominal muscles was more marked above the umbilicus than below, and the right rectus muscle was distinctly more rigid than the left.

Laparotomy was performed at 2.30 P.M., 15 hours after the onset of acute symptoms. A vertical incision was made through the upper part of the right rectus three-quarters of an inch from the middle line. As soon as the peritoneum was opened odourless gas escaped, together with some fluid which resembled weak tea with milk. On raising up the liver and pressing down the transverse colon a perforation about one-sixth of an inch in diameter was found on the upper surface of the duodenum near the junction of the first and second portions. Bilious material was oozing through the opening. The duodenum and neighbouring parts were coated with plastic lymph. No induration could be felt in the neighbourhood of the ulcer. The peritoneum was taken up at three points beyond the margin of the ulcer by a fine silk ligature and the included area was then inverted and the suture was drawn tight and knotted. Some difficulty was experienced at this stage on account of the awkward position of the ulcer and the constant oozing out of bilious material which prevented a good view of the seat of the lesion. When this had been accomplished the surrounding peritoneum was swabbed dry, an indiarubber drainage-tube with a gauze wick inserted down to the site of the perforation, and the abdominal wound sutured. The patient recovered from the immediate effects of the operation but afterwards developed a subhepatic abscess which was opened and drained through the right loin on April 14th, 41 days after the first operation. After this convalescence was uninterrupted. When last seen, on August 10th, the patient was in good health and stated that he was quite free from pain or discomfort after food.

Remarks by Mr. BURROWS.—The above case is of some interest because comparatively few cases have been recorded where perforation of a duodenal ulcer has given rise to symptoms sufficiently characteristic to allow of a correct diagnosis being made previously to operation or necropsy. In this instance, fortunately, the symptoms both before and after perforation pointed rather definitely to the duodenum as the site of the lesion.

ST. MARY'S HOSPITAL, MANCHESTER.

A CASE OF ECTOPIC GESTATION REMOVED BY ABDOMINAL SECTION WITH A DERMOID TUMOUR OF THE EXTREMITY OF THE LEFT TUBE.

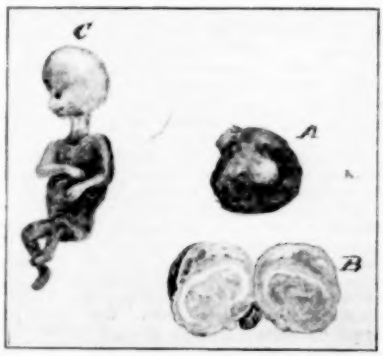
(Under the care of Dr. D. LLOYD ROBERTS.)

THE patient was a married woman, aged 29 years, who was admitted into St. Mary's Hospital, Manchester, on April 23rd, 1903. Her menstrual history was as follows. The first menstruation occurred at 12 years of age and the last on Jan. 1st, 1903; it had previously been regular every three weeks; the duration was five days, the amount being small. There had been amenorrhœa for four months. She had had no previous pregnancy. She had had pains in the stomach on and off since the last period. The pains came on very severely on the day of admission; the patient was sick but did not faint. During the last month she had had several attacks of pain and collapse, two of the attacks having occurred within the last four days. On admission the patient was exceedingly blanched; she had much pain, with considerable tenderness. There was an indefinite swelling in the lower part of the abdomen, especially on the right side; dulness was present in both flanks. Per vaginam the vaginal orifice and the walls were normal; the os and the cervix were also normal. There was some bulging in the posterior and right fornices; the uterus was rather heavy. There was a semi-cystic swelling on the right side about as large as an emu's egg.

Operation was performed on April 24th. On opening the abdomen a large quantity of dark-coloured blood escaped which with a considerable amount of laminated clot and a fœtus about three inches long were removed. The right tube was then found to be ruptured, with apparently the placenta protruding. The tube and the ovary were removed. Attached to the left tube was found a small rather firm tumour about

one and a quarter inches long and three-quarters of an inch broad, which was removed (see Figs. 1 and 2). The abdomen was then washed out with sterilised water. The abdominal wound was brought together by a single row of

FIG. 1.



A, Small teratoma as removed. *B*, The same in section. *C*, Foetus.

silkworm gut sutures. The dressing consisted of aseptic gauze and cotton-wool secured with broad strips of plaster. The temperature rose to 99·8° F. on the evening of the operation, after which it was never above 99·6°. The ligatures

FIG. 2.

D, Ruptured tubal sac. *E*, Ovary. *F*, Pedicle composed of severed broad ligament.

were removed on the eighth day and the subsequent recovery of the patient was uneventful

Remarks by Dr LLOYD ROBERTS.—Naturally it may be asked why vaginal coeliotomy was not performed and the sac and its contents removed through the orifice so made. I should certainly prefer this route if the sac were fixed, adherent, and applied to the upper wall of the vagina and the floor of the pelvis. But in cases similar to this one, where the sac has burst and where the contents have escaped into the pelvic cavity, and where the ovum has separated from its placental attachment and is floating along with blood, fluid, and débris in the peritoneal cavity, I prefer the abdominal route. Moreover, sight as well as touch is of material help to the operator when dealing with complicated cases of ectopic gestation. Also as the separated ovum in this case had ascended into the abdominal cavity it would have been very difficult to find and to extract it by the vaginal route.

A word as to the question of irrigation *versus* cleaning the abdominal cavity with sponge or swabs of cotton wool. When numerous small clots and a large amount of fluid are present I much prefer irrigation with sterilised water to sponging as it is well nigh impossible to remove the fluid and clots from the recesses behind and about the intestines with the sponge.

Another point of interest in this case was the small tumour which was attached to the fimbriated extremity of the other Fallopian tube and proved to be a small teratomatous growth, containing bone, cartilage, connective tissue, and necrotic masses which, so far as can be judged, were of epithelial origin. Dr. W. E. Fothergill, who kindly examined the tumour for me, says that it must be regarded as a teratomatous growth and is probably a dermoid cyst. No chorionic villi were found in it.

DURHAM COUNTY HOSPITAL.

A CASE OF FOREIGN BODY IN THE URETHRA.

(Under the care of Mr. S. W. PLUMMER.)

A YOUNG man, aged 22 years, was admitted to the Durham County Hospital on June 9th, 1903, complaining that on Feb. 5th last he had passed down his urethra a hat-pin of about the length of his finger. His mental capacity was weak and he had often been in trouble with the police for minor offences. Two years previously he had been operated on in the hospital for the radical cure of hernia when his behaviour gave great trouble. On examination the hernia was completely cured. Passing a sound into the bladder a foreign body was easily felt in the prostatic urethra, and when the sound was passed fully into the bladder it distinctly gave the impression that the foreign body projected into the bladder. As the man said he had passed the pin head first into the urethra it was decided to open the bladder suprapubically, feeling that if pressure were made on it by the perineum it would only be forced still further into the bladder. This was done but no trace of the pin could be felt on digital exploration. A median lithotomy staff was then passed and the urethra was opened in the perineum and after some little difficulty a steel hat pin two and five-eighth inches in length with a large black glass head was extracted.

Remarks by Mr. PLUMMER.—On a previous occasion[1] I recorded in THE LANCET a case of removal from the male bladder and urethra of a hat-pin five inches in length. The Editors then gave some references to similar cases. The above notes of another instance may be of interest. The chief point in this case is the length of time (over four months) during which the hat-pin had been in the urethra without causing any trouble; indeed, when the patient applied for admission he did not complain and only stated it was there. Mr. Brunel's manœuvre of reversing the pin could not in this case be carried out. The urethral wound was sutured and the after-treatment directed to the suprapubic cystotomy.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Fractures in Skeletons of Large Apes.—Cancer on Nerve or Trophic Areas.—Cartilaginous Body from the Knee-joint.—Prostatectomy.—Congenital Sacral Tumour removed from a Girl, aged one year.

A MEETING of this society was held on Oct. 20th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

Mr. W. L. H DUCKWORTH read a paper entitled "Notes on Fractures and other Skeletal Lesions in Anthropoid Apes" and illustrated his communication by specimens and by lantern slides. He said that in the course of observations on the skeletons of anthropoid apes he had been struck by the large number of instances of bony lesions presented by these animals. The examples shown consisted principally of cases in which the natural repair of a fractured bone had been attended by an excessive production of callus. Pathological bone formation due to osteo-arthritis and to periostitis of obscure nature was also met with. In conclusion, it was pointed out that the large apes were much more liable to fractures than were the smaller apes and that among the larger apes the most arboreal example—viz., the orang-outang—was the most susceptible. This would indicate that the orang-outang had increased in size to the utmost limit appropriate to a mammal with an arboreal habitat and that it was thus very delicately adjusted to its environment. This no doubt

[1] THE LANCET, Nov. 7th, 1891, p. 1039.

explained its limited area of geographical distribution. Secondly, anthropoid apes in the wild state were able to survive very terrible injuries consequent on traumatic lesions. Thirdly, the investigation of such pathological specimens had important bearings on the particular case of the femur which was described as that of an intermediate form between the apes and man and which bore a large exostosis springing from the linea aspera.

Mr. G. L. CHEATLE said that in a former communication to the society he had pointed out that Rodent Ulcers and Squamous Epithelioma occupied certain areas which he thought were nerve areas and sensory nerve areas. He wished now to amplify that point. He alluded to the difficulty of demonstrating squamous epithelioma occupying nerve areas, a difficulty which he believed could be explained by the separation of cells from the primary growth and hence complicating matters by becoming secondary deposits. He wished further to strengthen another observation which he had made—viz., that the incidence of cancer frequently occurred on those points at which a nerve became cutaneous—and to show that the genesis of carcinoma was very frequently associated with points which Dr. H. Head had described as maximum points, and here again a difficulty was experienced in bringing into line squamous epithelioma with rodent ulcer. He divided his paper into two parts: (1) the spread of cancer in nerve areas; and (2) the incidence of cancer on Head's maximum points. In illustration of these points he showed a number of lantern slides of cases of rodent ulcer, proving that the growth tended to occupy certain nerve areas and also that the growth tended to start in Head's maximum points. On the face it might be asserted that these points corresponded to embryonic clefts, but such an argument could not be advanced against the growth on the trunk which also originated in Head's maximum points.

Mr. RAYMOND JOHNSON brought forward a specimen of a Pedunculated Cartilaginous Body removed from the Knee-joint. The portion of the synovial membrane to which the pedicle was attached was also removed and the interest of the specimen consisted in the presence of numerous nodules of hyaline cartilage in the synovial membrane around the attachment of the pedunculated body. It thus demonstrated in an unusual way the formation of such a chondroma by a growth of cartilage in the synovial membrane. A specimen of a Cartilaginous Tumour removed from a Tendon Sheath in the Hand was also exhibited. No record had been found of a similar specimen.

Mr. S. G. SHATTOCK discussed certain anatomical points in connexion with the operation of Prostatectomy from an examination of a series of specimens which had been presented by Mr. P. J. Freyer to the Museum of the Royal College of Surgeons of England. The two questions upon which controversy had arisen were: (1) how far the prostatic portion of the urethra was preserved, and (2) was the whole of the prostate removed. Much of the interest in regard to the urethra had now gone, since its preservation was no longer regarded as of any moment. The subject of the urethra had to be considered firstly in the case where the gland was removed with its circumference entire, and secondly, when the gland was divided in front of the urethra with the definite purpose of saving the canal. As an example of the first Mr. Shattock selected the eighth case recorded by Mr. Freyer in the *British Medical Journal*, Feb. 1st, 1902, a case in which Mr. Freyer thought that the urethra had been preserved. Here, after the gland was detached all round, with the catheter passing through its axis, the whole mass, on counter pressure being made from the rectum, was suddenly propelled into the bladder and it was thereupon noticed that the catheter was covered by the urethra for about two inches from the triangular ligament; this portion of urethra was regarded by Mr. Freyer as prostatic, off which the gland had been drawn like a bead from a thread. The specimen showed beyond the anterior end of the gland a cord-like process which was viewed by the operator as the pubo-prostatic ligaments. A minute examination of this, however, showed it to be urethral mucosa covered on one side with columnar epithelium and continued without solution of continuity into the bore of the gland. This must be regarded as membranous urethra avulsed in connexion with the prostate and this, Mr. Shattock imagined, was the urethra felt on the catheter after the gland had been displaced into the bladder and whilst the finger was still in front of, or on the distal side of, the gland. In a second class of cases the gland was parted in the mid-line in front of, or above, the urethra with the object of peeling the latter off and afterwards completing the removal of the enucleated gland by displacing it into the bladder. As an example, in Case 9 of Mr. Freyer's lists this was thought to have been carried out, but examination showed that except at the anterior end the urethral and vesical mucosa remain on the enlarged gland, the depth of the canal being, as usually the case, largely increased. Mr. Shattock showed a like condition in an enlarged prostate removed by Mr. A. Pearce Gould where a similar attempt was made to preserve the urethra and where almost the whole of the mucosa remained, in places so thinned that it could hardly be raised on dissection, yet microscopically showing a rosary of prominent epithelium and traceable without interruption to the flaps of thicker mucosa remaining on the vesical surface. In fact, the object aimed at in such circumstances was so incompletely attained that it could not, properly speaking, be said to have been carried out, such extensive tracts of thinned urethral mucosa did examination disclose adhering to the deepened bore of the gland. Passing on to the other question, how much of the gland was removed, Mr. Shattock had selected the most clearly extirpated of all Mr. Freyer's specimens (Case 28, *British Medical Journal*, April 18th, 1903). The gland was removed with its circumference quite entire. After hardening, it was cut completely through at right angles to the axis of the urethra and microscopic sections were made of the entire area, midway between the upper, the vesical, and the lower ends. To prevent confusion it was necessary to use terms in the same sense as Mr. Freyer. By the "sheath" was to be understood the fibrous investment furnished by the recto-vesical fascia; by the "capsule," the fibro-muscular cortex which was directly continuous with the stroma of the gland, but into which the gland tissue did not itself penetrate. The transverse section in Mr. Freyer's specimen displayed a well-marked cortex of unstriped muscle fibre completely surrounding the glandular mass. It was at once obvious that what had been carried out was not the mere enucleation of an adenomatous formation. The surface of a prostatic adenoma, like that of others, was smooth and lobulated or tuberous. In the various other of Mr. Freyer's specimens also the same held true. The mass removed was invested with a cortical zone of fibro-muscular tissue, through rents or bosses in which the smooth tuberous adenomatous mass of the enlargement presented itself to view. Mr. Freyer's operation, therefore, was a prostatectomy. But was it as *complete* a prostatectomy histologically as it was from a surgical aspect? Did the line of enucleation absolutely and everywhere pass beyond the limits of the gland tissue? A critical study of the muscular cortex in Mr. Freyer's specimen showed that this was not the case. For long distances the cortex was solely of plain muscle concentrically disposed, but here and there were the unmistakeable flattened masses of gland tissue and so involved were these in the line of enucleation that one could not but believe that others had remained behind. For in this, as in the others of Mr. Freyer's specimens, the transversely fasciculated character of the surface of the capsule showed that the line of enucleation was not beyond but through it. From the histological side, therefore, Mr. Shattock thought that prostatectomy was in most cases incomplete. A complete prostatectomy, in short, could hardly be verified in this strict sense except by the microscopic examination of the parts left behind.

Mr. H. J. CURTIS read a short paper on a case of Congenital Sacro-coccygeal Tumour successfully removed from a girl, 12 months old. It formed a prominence, surmounted by a tuft of fair hair, over the lower part of the right border of the sacrum and coccyx. The greater part of the tumour lay between these bones and the rectum, clearly visible at the operation. The tumour consisted of a series of cyst-like cavities imbedded in a mass of fat. The cysts were really tubules more or less dilated. In the fresh condition they were filled with clear, viscid, mucoid fluid. Microscopically the "cysts" were seen to be lined by a single layer of large, non-ciliated, fully developed, columnar epithelium cells. To such tumours Bland-Sutton had applied the name "thyroidd rmoid," in reference to the closed spaces lined by cubical or columnar epithelium containing mucoid fluid. Like Middledorpf's case the tumour contained connective tissue, mucous membrane with characteristic follicles, submucous tissue, and longitudinal and circular layers of muscle fibres; in other words it clearly represented a portion of bowel. In addition, areas of cartilage and of epithelial or epithelioid

cells massed together without intervening stroma existed. The epithelial element in all probability was the remnant of the undifferentiated embryonic tissue from which the tumour itself originated.

OBSTETRICAL SOCIETY OF LONDON.

Extra-Uterine Gestation.—Ruptured Tubal Gestation.—Abdominal Pregnancy.

A MEETING of this society was held on Oct. 7th, Dr. EDWARD MALINS, the President, being in the chair.

Mr. JOHN D. MALCOLM read a paper on an Operation for Extra-Uterine Gestation between the Third and Fourth Months of Gestation, with Removal of a Living Fœtus. The patient, a healthy woman, was married on Oct. 9th, 1899, at the age of 23 years. In the middle of April, 1900, she felt depressed, menstruation became irregular, and she had attacks of pelvic pain, with nausea, commencing in May. On July 17th a large abnormal mass was felt behind the upper part of the vaginal wall, nearly filling the pelvic cavity and rising to about half-way between the pubes and the umbilicus. The uterus was somewhat enlarged, was dragged up, and was pushed over to the left side of the pelvis. On July 18th an incision was made in the middle line above the pubes, a small collection of pus being opened, and through it the amniotic sac was evacuated. A fœtus of between three and four months' development was extracted without opening the peritoneum and the placenta was felt with an extensive attachment over the right side and floor of the pelvis. The cavity was packed with iodoform gauze and no attempt was made to remove the placenta. The latter remained alive and there were frequent and sometimes profuse hæmorrhages when the gauze packing was changed between July 24th and August 10th. On the latter date an attempt was made to break up and to get away the placenta. A small piece was torn off but hæmorrhage was so alarming that the wound had to be packed immediately. The placenta was killed by this procedure and there was hardly any blood lost afterwards, although every bit of the placenta had to be peeled off the maternal tissues and its removal was not completed until August 26th. There was an inflammatory attack with some intestinal difficulty in September and the wound did not finally heal until the middle of December. The patient was now in perfect health.

Dr. C. H. G. LOCKYER contributed a paper on a Case of Ruptured Tubal Gestation in which the ovum continued to live for about four months, the gestation sac becoming implanted on the omentum. The symptoms began with uterine hæmorrhage and the passage of a (?) decidual membrane on Dec. 27th, 1902; this was after a period of amenorrhœa dating from the end of October (eight or nine weeks). Signs of internal hæmorrhage appeared on Jan. 11th, 1903 (about the eleventh week of gestation). A swelling in the left ovarian region was palpable on Jan 20th. An operation was performed on Feb. 11th and death took place 24 hours later. The primary tubal rupture occurred through the upper, or peritoneal, aspect of the tube and the fœtus escaped into the abdominal cavity; chorionic villi gained immediate attachment to the lower edge of the omentum, which approximated, and presumably was adherent, to the tube prior to rupture. The omentum enveloped the gestation products and soon shut them off from the general peritoneal cavity. The secondary gestation sac so formed seemed to have remained intact from Jan. 11th to Feb. 5th. On Feb 9th, the time of the third crisis, the fœtus probably escaped through a rent in the amnion, since it was found in the peritoneal cavity two days later at the time of the operation. The way in which implantation on to the omentum took place was analogous to that which occurred when, the rent having been below, the villi grew out between the layers of the broad ligament, but events proved that the risk of secondary rupture was greater when the sac was formed of omentum than when the envelope was composed of the broad ligament folds.

Dr. J. B. HELLIER brought forward the report of a case of Abdominal Pregnancy secondary to a Partially Ruptured Pregnant Tube.

Dr. G. E. HERMAN said that he could not agree with Mr. Malcolm's recommendation of prompt operation in all cases of ectopic pregnancy in which the fœtus was living, whatever the period of pregnancy. In the first half of ectopic pregnancy certain dangerous events, such as rupture of the tube or of the gestation sac, were frequent, but dangerous accidents of any kind were rare in the second half of ectopic pregnancy. When the patient got to term spurious labour came on and at this time the patient was in practically no danger. Then the child died, the liquor amnii was absorbed, and, finally, after an interval, the length of which was not yet exactly known, the placenta became thrombosed. The patient was as a rule in no danger until suppuration took place, but suppuration might not occur at all and the patient might remain in good health to the end of a long life, subject only to the inconvenience of an enlarged abdomen. He therefore thought that in the second half of ectopic pregnancy with a living child the safer course was to wait until symptoms of suppuration had begun.

Dr. W. F. V. BONNEY said that within the last few months two similar cases had come under his own notice. Both these two patients were operated on by Mr. J. Bland-Sutton and an enormous retroperitoneal collection of blood was found in the first, whilst from the second, who had also suffered from two months' amenorrhœa, a perfect and unruptured secondary abdominal sac, containing a living fœtus of between four and five months, was removed with a successful result.

Dr. AMAND J. M. ROUTH gave some further details of the history of Dr. Lockyer's patient. She had had three attacks of collapse from internal hæmorrhage with amenorrhœa for nine weeks. The diagnosis of extra-uterine gestation was made from the history and the physical signs. It was assumed that it was a secondary intraperitoneal pregnancy after tubal rupture owing to the tumour being entirely distinct from the retroverted uterus. At the operation the placenta was found to be already separated on its central maternal surface and adherent at several parts of its circumference to the omentum and the broad ligament. After its removal there was a profuse general capillary hæmorrhage from all the underlying structures. This was at once arrested by firmly applied gauze pressure. As the anæsthesia passed off uncontrollable vomiting ensued and she died from exhaustion in 24 hours. Dr. Routh asked for the experience of those present regarding the persistent amenorrhœa in this case and the one mentioned by Dr. Bonney instead of the usual metrorrhagia. Was it peculiar to these cases of secondary intraperitoneal pregnancy?

Specimens were exhibited by Dr. W. E. BATCHELOR, Dr. H. R. SPENCER, Mr. J. H. TARGETT, and Dr. A. W. SIKES.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Oct. 15th, Dr. W. WINSLOW HALL, the President, being in the chair.

Dr. HERBERT TILLEY showed a man, aged 49 years, upon whom he had operated five and a half years ago for Squamous-celled Epithelioma of the Right Vocal Cord. The only symptom for the relief of which the patient applied to the hospital was "hoarseness" of two months' duration. Laryngoscopic examination revealed a well-defined pale nodule occupying the anterior two-thirds of the right vocal cord. It was of the size of a small horse-bean and surrounded by a slight zone of congestion. The vocal cord upon which it grew was motionless in phonation. This fact, coupled with the appearance of the growth, determined the diagnosis of epithelioma. There were no enlarged glands in the neck. The operation consisted of a preliminary tracheotomy, followed by insertion of Hahn's tampon cannula in order to prevent the blood passing into the lungs during the operation. The thyroid cartilage was divided in the middle line and the halves were held apart while the diseased cord with the ventricular band was completely dissected out. Finally, the halves of the thyroid cartilage were brought into accurate apposition by a catgut stitch, the external wound was sutured for three-quarters of its length, and the cannula was removed from the trachea. The patient made a rapid recovery. The points of interest in the case were that the hoarseness was the only symptom of such a grave disease and the excellent voice which the patient then possessed. The place of the original vocal cord had been taken by a cicatricial band forming a sort of fixed false cord. Dr. Tilley laid stress on the importance of an early diagnosis in these cases. If the radical operation was performed early in these intrinsic cases a very high percentage of cures (compared with malignant disease in other parts of the body)

could be obtained.—Dr. ATWOOD THORNE would have liked to hear more with regard to the microscopical results.—Dr. TILLEY replied that the sections of the growth exhibited at the Laryngological Society showed it to be a squamous epithelioma with cell nests.

Dr. WILFRED J. HARRIS showed a man, aged 40 years, who three years ago fell a distance of about four feet on to his left shoulder causing Immediate Paralysis of his Arm. This was followed by wasting of the deltoid, infra-spinatus, biceps, brachialis anticus, and supinator longus, and by anæsthesia of the thumb and index finger. No improvement occurred after treatment by galvanism. An operation by Mr. V. Warren Low in June last on the upper roots of the brachial plexus showed that they were buried in scar tissue. This was cleared away and stimulation of the roots by faradism showed the fifth root to be quite destroyed, while the sixth root gave good reactions. The fifth nerve was then cut across and sutured into a nick made in the sixth root. Immediate improvement resulted in the anæsthesia of the thumb and finger. The galvanic reactions of the affected muscles have also since improved.—The PRESIDENT asked if the man was likely to recover complete power in the limb.—Dr. HARRIS replied that muscular power might begin to return after six months.

Mr. E. LAMING EVANS showed a case of Spina Bifida in a child, aged three years, involving the third, fourth, and fifth lumbar vertebræ and the whole of the sacrum. Control over the bladder was absent. Associated with the trouble was a talipes equino-varus involving both feet, of congenital origin. The electrical reactions of the muscles of the legs were normal. The skin of the feet was atrophic. Mr. Evans considered the case to be one of meningo-myelocele and recommended no operative interference except for the correction of the deformity of the feet.—Mr. P. L. DANIEL suggested arthrodesis on the ankle- and knee-joints so as to fix the joints and to enable the child to walk.—Mr. EVANS replied that as there was good muscular power in all the muscles of the leg and as the child had already walked upon her feet in the deformed position arthrodesis did not seem called for. The child would be able to walk well with a plantigrade foot after the equino varus deformity had been corrected.

Mr. LAMING EVANS also showed a woman, aged 21 years, with Double Pes Cavus and other Deformity of the Feet which had existed as long as she could remember. No history of an infantile paralysis could be obtained. Situated over the eleventh and twelfth dorsal spines was a swelling one and a half inches in diameter over which the skin was freely moveable, tender to the touch, and not attached to the underlying tissues by any definite pedicle. Hypertrichosis was absent. Mr. Evans suggested the possibility of the swelling being connected with the meninges and that the condition of the feet was dependent upon some spinal cord mischief of congenital origin.

Mr. DANIEL showed a man suffering from Tabes Dorsalis, with a perforating ulcer at the base of the second and third toes, causing absorption of the phalanx of the third toe. He called attention to the fact that cases of untreated mild syphilis and cases of "soft sore" were frequently followed by tabes and ulcer many years after infection. He thought that "soft sores," with tendency to spread, to infect by contact, and to produce enlargement of the glands of considerable acuteness, were all probably syphilitic and should be so treated. Malignant change in perforating ulcer was rare; and this fact was not in accord with the idea that nerve control was a great factor in cancer distribution and causation. The loss of nerve control in perforating ulcer in association with the chronic nature of the wound should lead to frequent malignant change on the "nervous theory."—Mr. F. JAFFREY suggested treatment by oxygen, obtained by applying peroxide of hydrogen for half an hour daily. At other times the ulcer should be protected with boric lint.—Dr. HARRIS considered these ulcers to be due not merely to pressure but to be also of trophic origin.—Mr. LAMING EVANS suggested removal of the ulcer and necrosed bone, as thereby relapse was more likely to be avoided. He considered that the trophic element entered largely into the causation of these ulcers.—Mr. DANIEL, in reply, said that he had no belief in trophic action. For instance, in removal of the Gasserian ganglion the sloughing which followed was always due to sepsis and trauma of the cornea. As regarded treatment he proposed to remove the third toe and the diseased tissues.

Mr. JAFFREY showed, for Mr. T. CRISP ENGLISH, an old man with an enormous Ventral Hernia, apparently containing a large proportion of the abdominal contents. In consequence of the absence of Mr. English no notes on the case were forthcoming.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The autumn meeting of the Northern and Midland Division of this association was held on Oct. 9th at the Northumberland County Asylum, Morpeth, by the kind invitation of Dr. T. W. W. Macdowall.—The members first visited one of the villas recently built to the east of the main asylum block. It provided for 40 male patients. The accommodation given was excellent and there was a great sense of freedom, there being no locks and the patients being free to go in and out at will. The cost was very moderate, £120 per bed including furniture. Dr. Macdowall, the president of the meeting in the afternoon, in giving an account of the new departure, claimed that about 25 per cent. of pauper patients could be accommodated in villas similar to those which the members had seen and that it was much less expensive and much more comfortable for the patients than a large asylum building. He further claimed that chronic patients improved mentally on removal to the more homely surroundings provided in small houses of this description.—Dr. A. W. Campbell of Rainhill gave a demonstration of Histological Studies of Cortical Localisation. He gave a detailed account of a long series of researches into the structure of the cortex and showed the great value of this branch of study in correcting and confirming the results of experimental investigation. He showed a beautiful series of drawings of sections of the cortex and demonstrated the differences in structure between the different areas. He showed that his results confirmed the previous conclusions of Mr. W. Bevan Lewis which at one time had seemed to be in opposition to experimental results. It had now been shown that the conclusions arrived at by the histological investigation as regards the limits of the motor area had been fully confirmed. The President, Dr. W. F. Menzies, and Dr. J. Middlemass congratulated Dr. Campbell on his brilliant research and discussed some of the points raised and Dr. Campbell replied.—Dr. Middlemass exhibited a case of Development of General Paralysis in which the history and signs of congenital syphilis were very clear. He pointed out the gradual growth in opinion that general paralysis was always due to syphilis, inherited or acquired.—The President, Dr. W. M. A. Smith, and Dr. Menzies joined in the discussion which followed.—Dr. Bedford Pierce showed an automatic fire alarm box containing an exit-key within it which had been fitted at Throxenby Hall, Scarborough, a branch of the Retreat. He claimed that this association of alarm and exit-key was a great safeguard in case of fire and it also prevented the key being used by unauthorised persons.—Dr. Norah Kemp read notes of a case in which thyroid treatment repeatedly produced temporary benefit. The case was a very striking one; a chronic maniacal and utterly incoherent patient had had a lucid interval lasting a few days on four occasions following the administration of thyroid extract.—The President, Dr. Middlemass, Dr. Smith, and Dr. Pierce joined in a discussion and all agreed that on the whole the results of thyroid treatment were very disappointing and the President pointed out the real danger of cardiac failure from using the drug.

DERMATOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on Oct. 14th, Dr. H. Radcliffe-Crocker being in the chair.—Mr. Malcolm A. Morris showed two cases of Lupus Erythematosus in both of which the buccal cavity was affected. The first case was that of a man, aged 53 years, who had suffered from the disease more or less since he was 26 years of age. The present attack dated from about a year previously and was associated with severe abdominal pain, loss of smell, and numbness in the fingers, but the sense of smell had returned. The tongue was red and raw-looking, there were lesions on the palate, and the cutaneous eruption affected the hands and the face. The second case was that of a woman, aged 30 years; the disease had started on the head and then spread to the face and arms which were very severely affected. There were several small annular patches on the tongue showing a pale atrophic centre with red, congested margins.—Mr. Willmott H. Evans showed a boy with a Linear Mole affecting the area supplied by the dorsal branch of the left ulnar nerve on the back of the hand.—Dr. J. H. Sequeira showed a girl,

aged 15 years, with a number of Ulcers and a Scar-leaving Eruption on both lower extremities. The eruption had started as blind boils in June, 1903.—The general opinion of those present was that it was a form of tuberculosis.—Dr. E. G Graham Little showed: (1) A single woman, aged 45 years, who had suffered for 13 months with an Ulcerating Spreading Eruption on the Dorsum of the Right Foot and for a shorter time from a somewhat similar patch on the Left Thigh. That on the foot showed multiple steeply cut ulcers with very high tumour-like edges. There was no history of syphilis but this was the diagnosis generally offered.—Mr. Arthur Shillitoe showed a case of Gyrate Psoriasis in a man who had been also attacked with gonorrhœa. The case was shown to demonstrate the improvement which had taken place in the psoriasis from the administration of copaiba resin given for the gonorrhœa.—Dr. S E Dore showed a Russian suffering from Recklinghausen's Disease. The patient was covered with *café au lait* patches and small freckles and also exhibited numerous tumours beneath, and in, the true skin. One on the right forearm seemed to be connected with a nerve and this and one on the back were tender on pressure. The pigmentary changes had been present since birth, while the tumours were said to be still appearing.—Dr. A. Whitfield showed a man, aged 25 years, who had had syphilis five years before. 12 months previously a new outbreak of cutaneous gummata had appeared on the front of the neck leaving extensive scarring. At the same time some pustules had appeared on the back of the neck and had formed tumours. When shown there were two keloidal masses on the nape of the neck at the hairy margin and in these the hair follicles were gathered together by the contracting fibrous tissue so that the hairs issued in little brushes. The condition was a rare one and was known as acne keloid and generally believed to be unconnected with syphilis.

HUNTERIAN SOCIETY.—A meeting of this society was held on Oct. 14th, Dr. W. A. Dingle being in the chair.—The first Hunterian Lecture was delivered by Dr. W. Hale White, the subject being Some Clinical Considerations concerning certain of the Rarer Forms of Enlargement of the Heart. He first alluded to the difficulty of estimating by percussion whether the heart was enlarged and he then pointed out how much it might become hypertrophied as a result of pericarditis. This was due to the fact that the main function of the fibrous pericardium was to support the heart and to prevent its dilatation; hence when the pericardium was softened by inflammation the heart readily dilated and as when dilated it acted under a great mechanical disadvantage it soon underwent compensatory hypertrophy. The object of treatment must be to overcome the dilatation, because experience showed that when adhesions took place on the heart which was not dilated very little harm followed, but if the adhesions took place on the dilated organ the patient would suffer for the rest of his life from all the more serious effects of cardiac failure. The treatment of pericarditis was discussed and also the best means of preventing dilatation. Dr. Hale White next alluded to the cardiac enlargement which followed the specific fevers and he then proceeded to discuss that which was due to over-indulgence in alcoholic drinks. Four cases were narrated. In three of them a post-mortem examination was held and no other cause than alcoholic drink could be found for the enlargement. These three hearts weighed respectively 22, 20, and 20 ounces; no valvular disease or adherent pericardium could be found. The muscle was histologically healthy. The chief symptoms of the condition were dyspnœa and a rapid, feeble, and often irregular pulse; the cardiac impulse was displaced outwards and the sounds were faint; no murmurs were present. If the patient lived long enough severe dilatation might ensue and then there were all the symptoms of backward venous congestion. Owing to the presence of albuminuria such cases were difficult to distinguish from chronic interstitial nephritis. It was shown that such cases were especially common in those German towns where large quantities of beer were drunk. The cause of the condition was discussed and it was shown that nothing histologically abnormal could usually be found in the heart and that the condition could not be ascribed to any particular constituent of the beer, or to the quantity of the fluid drunk, or to alcoholic neuritis of the vagus. The last rare form of enlargement considered was that due to a fibroid heart and it was shown that this was a frequent cause of sudden death. Dr. Hale White mentioned that probably an alcoholic heart was commoner than was usually supposed.—A hearty vote of thanks was accorded to Dr. Hale White for his most interesting paper.

SOUTH-WEST LONDON MEDICAL SOCIETY.—The first meeting of the session of this society was held at Bollingbroke Hospital on Oct. 14th, Mr. E. F. White, the President, being in the chair.—Mr. P. J. Freyer read a paper entitled "Some Practical Remarks on the Enucleation of the Prostate." Having first referred to erroneous ideas regarding the anatomy of the prostate he described the prostate as consisting of two distinct lobes agglutinated together to form a twin organ. During a portion of human fœtal life the two lobes were separate while in the lower animals they were distinct throughout life. Each lobe was enveloped in a strong fibrous capsule and an outer capsule was formed by the recto-vesical fascia in which the large veins were imbedded. The ejaculatory ducts entered the prostatic urethra but did not pierce the capsule. Enlarged prostate was associated with a decline of sexual powers and assumed the form of an adenomatous outgrowth. As it grew it pushed the recto-vesical fascia before it. It could not advance in front owing to the triangular ligament. It advanced laterally until the levator ani and obturator were crushed against the sides of the pelvis. Then it grew into the bladder and gave the appearance of a middle lobe, but there was no middle lobe, only a prolongation of a lateral one. The main obstruction was caused by the lateral pressure of the two lobes, not as was generally supposed by the "middle" lobe acting as a ball valve. Mr. Freyer described the stages of the operation. Having performed a suprapubic cystotomy a finger of one hand was passed into the rectum and the prostate was pushed up into the bladder. The most prominent part was then attacked. The mucous membrane was scraped through with a sharpened fingernail and the capsule was reached; this was tense and was not likely to tear. The organ was then enucleated with varying degrees of difficulty, but in the majority of cases it was easily peeled off. The cavity quickly contracted, similarly to the uterus after labour, and there was very little hæmorrhage. In no case had there been any contraction causing stricture and patients regained the power of retaining and passing urine without the aid of an instrument. Mr. Freyer showed a number of specimens which he had removed.

GLASGOW NORTHERN MEDICAL SOCIETY.—The first meeting of the session 1903–04 of this society was held on Oct. 13th, when the business reports of last session were read, after which the retiring President, Dr. J. Steel Muir, addressed the meeting.—The following gentlemen were elected office-bearers for the ensuing session:—President: Dr. A. Thomson Campbell. Vice-Presidents: Mr. C. F. Spinks and Dr J. Galbraith Connal. Treasurer: Dr. James Todd. Secretary: Dr. J G. Gray. Reporting secretary: Dr J A C Macewen. Sealkeeper: Dr. J. C. Edmiston. Auditors: Mr. T. D. Waddell and Dr. John Ritchie. Ordinary members of the council: Dr. J. W. Allan, Dr. J. A. Wilson, Dr. J B Miller, Dr. J. Baird, Dr. M. Black, Dr. R. G. Inglis, Dr. W. Campbell, Dr. M. Campbell, Dr. J. Rutherford, Dr. Campbell S. Marshall, Dr. Muir, and Dr. J. Donald.

FOLKESTONE MEDICAL SOCIETY.—A meeting of this society was held on Oct. 9th, Dr. Thomas Eustes, the President, being in the chair.—The President read notes of a case of Division of the Ulnar Nerve and the Flexor Sublimis Tendons by a Piece of Glass. The nerve and tendons were sutured and all did well except that the final deep branch of the nerve was not known to be divided and escaped observation at the operation, so that the two distal joints of the little and ring finger were contracted.—The President also read notes of operations for relapsing appendicitis, chronic intestinal obstruction, hydatid cyst of the liver, and the radical cure of inguinal hernia; also of cases of ovariotomy, cholecystostomy, and myomectomy.

WIGAN MEDICAL SOCIETY.—An ordinary meeting of this society was held on Oct. 8th, the President, Dr. M. Benson, being in the chair.—Mr. C. M. Brady showed a Fibro-myomatous Uterus removed by Abdominal Hysterectomy.—The President opened a debate on Forceps in Midwifery with especial reference to Axis-traction Forceps.—An interesting discussion ensued in which the following members took part: Dr. F. Rees, Dr. J. Blair, Mr. M. G. McElligott, Mr. Brady, Mr. W. Mill, and Mr. W. Berry.—The President replied.

Reviews and Notices of Books.

Modern Materia Medica and Therapeutics. By A. A. STEVENS, A.M., M.D. Pennsylvania. Third edition. London and Philadelphia: W. B. Saunders and Co. 1903. Pp. 663. Crown 8vo. Price 16*s.* net.

THIS work refers almost wholly to the drugs and preparations of the last United States Pharmacopœia which was published in 1893. In addition to these official medicines a few of recent introduction are mentioned but these are quite without references to authorities and the work in respect of comprehensiveness does not come up to our English Extra Pharmacopœia. The book is well bound in cloth and the print is large and clear but the volume seems to us unnecessarily heavy; if a book is to be a good deal in use it should be easy and light to handle. In this, the third edition, there is an entire rearrangement of the subject-matter and several of the chapters are quite new. The drugs are no longer in their alphabetical order but are classified according to their medicinal effects. The new arrangement seems satisfactory enough but there is but one general index for all parts of the book and to find any particular drug it is best to look for it under the name of one of the diseases for which it has been used as a remedy. Failing to find it there the reader may look for the drug under its own name and in case of non-success he is tempted to lay the book aside. As an instance of this, calcium chloride sought under the heading of chorea, or tuberculosis, or "scrofula," will not be found, though the drug has been widely used for the tuberculous glands of children. Under the heading of "calcii chloridum" it will not be found, though the drug is official in the United States Pharmacopœia. Under "hæmorrhage" the name will be found and on referring to p. 379 a short notice of the drug is given, no mention at all being made of its use in "scrofulous" affections of glands.

The part of the volume devoted to therapeutics only is on the whole satisfactory. There are excellent paragraphs on the sanatorium treatment of pulmonary tuberculosis. Among the directions as to how to deal with active hæmoptysis there is one with a quaint old-fashioned flavour about it. It seems to refer to the principle on which Junot's boot was used in the time of our grandfathers. "The application of firm ligatures to the limbs in order to lessen the volume of blood returning to the lungs" is what the author suggests as a practical method.

There is a good chapter dealing with remedial measures other than materia medica as the term is generally understood. Therein will be found notes on massage, medical electricity, the Schott treatment of chronic heart disease, the transfusion of blood and saline solution, phototherapy, blood-letting, and lavage of the stomach.

On the whole, Modern Materia Medica seems to be free from errors and a fairly readable book but we are a little doubtful whether it will become popular in this country.

A Manual of Practical Anatomy. By D. J. CUNNINGHAM, M.D. Edin. and Dub., D.Sc. Dub., LL.D. Glasg., D.C.L. Oxon., F.R.S., Professor of Anatomy at the University of Edinburgh. Vol. II: Thorax, Head, and Neck. Third edition, illustrated with 222 Engravings, many in Colours. London and Edinburgh: Young J. Pentland. 1903. Pp. 607. Price 10*s.* 6*d.* net.

THE first volume of this new edition of Professor Cunningham's Manual has already been noticed in these pages. The second volume appears to be in every way equal in excellence to the first. It shows signs of careful revision and has been brought quite abreast of modern knowledge. The section which shows most change is that which deals with the positions and relations of the thoracic viscera. Here full advantage has been taken of the results of recent methods and investigations and the section affords an admirably lucid *précis* of present knowledge regarding the lungs, the pleuræ, the heart, the pericardium, and the mediastina. Very few of the old illustrations are to be found in this portion of the book, they having been replaced by an entirely new series. The remainder of the book is devoted to the dissection of the head and neck. Here we do not find any very striking alterations in the text but the new illustrations are a great improvement on those which they have replaced. An admirable feature of Professor Cunningham's book has always been the excellent description of the dissection of the brain. With the assistance of the artist this section has been rendered even more attractive than before. Throughout the whole volume the system of numerical references to the details of the illustrations has now been abolished and a system of guide lines and names has been substituted. By slight modifications in the type the size of the book has been reduced by a few pages in spite of the increased information contained. The book is very practical and by following the instructions given a student cannot fail to make the most of the part which he is dissecting. He should be warned, however, not to allow the manual to replace the use of a systematic text-book of larger size. The descriptions are so lucid and full that there is apparently a danger in this direction.

Die Wirkung einiger Bakterien und ihrer Toxine auf verschiedene Organe des Körpers. Arbeiten aus dem Pathologischen Institute zu Helsingfors (Finnland). Herausgegeben von Professor Dr. E. H. HOMEN. (*The Action of Certain Bacteria and their Toxins on Different Organs of the Body. Research Work from the Pathological Institute at Helsingfors, Finland.* Edited by Professor E. H. HOMEN). With 13 plates. 1902. Pp. 523. Price 30*s.*

IN this publication will be found an account of some important and interesting bacteriological work which has extended over a period of nearly eight years and has been carried out by Professor E. H. Homén and others at the Helsingfors Pathological Institute. In reviewing the work it will not be possible to do more than to indicate the nature of the researches and the conclusions that have been drawn from them.

Professor Homén has already published the results of his work on the action of streptococci and their toxins on the peripheral nerves, spinal ganglia and cord of rabbits, and he has now carried out similar researches with staphylococci, pneumococci, bacilli coli, bacilli typhosi, and their toxins. Cultures or their filtrated toxins were injected into the sciatic nerve of rabbits and also into the spinal cord. The animals were killed at varying intervals of time after injection and the nerves and the cords were examined microscopically. Professor Homén finds that the propagation of these bacteria takes place similarly to that of the streptococci *vid* the lymph channels, especially along the inner side of the perineurium of the nerve and along the serous spaces and central canal of the cord, but that the extent and nature of this propagation vary somewhat for the different species of bacteria. Various inflammatory, destructive, and regenerative changes were found at the point of injection and in adjacent parts and these also vary for the different bacteria in nature, intensity, and extent, but we cannot go into further details on these points.

Dr. Ernst Ehrnrooth has carried out a series of experiments to determine how far trauma may act as a predisposing cause to changes in the brain which have been brought about by bacteria or their toxins injected into the bodies of rabbits. The main conclusions to which these experiments lead are that trauma predisposes the animal to infection of the brain or meninges by bacteria injected intravenously and that the degree, extent, and frequency of infection vary directly with the intensity of the trauma and inversely with the interval of

time allowed to elapse between the trauma and the bacterial injection.

Dr. Max Björkstén contributes an article on his researches as to the action of certain bacteria and their toxins on the liver. Streptococci, staphylococci, pneumococci, and their toxins were injected into the bile-duct, directly into the substance of the liver, and also subcutaneously and intravenously, and the animals were either killed or died at varying intervals of time after injection and the liver was examined microscopically. This very thorough and extensive series of experiments shows that the bacteria in question are able to set up changes in the liver of a degenerative and necrotic nature which may terminate in a complete cirrhosis. Dr. Björkstén considers that the formation of fibrous tissue is secondary to the degeneration of the parenchymatous cells of the liver and that only later the presence of this new tissue formation causes atrophy of the liver cells. Dr. Björkstén also makes a preliminary communication on the action of staphylococci and their toxins on muscle tissue.

Dr. O. Streng gives a full description of his work on the action of certain bacteria and their toxins on the kidneys of rabbits and the separation of these organisms from the body through the kidneys. Pneumococci, staphylococci, bacilli coli, streptococci, bacilli typhosi, and bacilli prodigiosi were employed in these experiments and they were injected either into the large veins in the ear of the rabbit or subcutaneously. At varying intervals of time after the injection—from half an hour to 12 hours—the animals were killed and the kidneys and the urine in the bladder were immediately examined microscopically and by culture. The shortest time in which the bacteria appeared in the urine varied for the different organisms from half an hour for the bacillus coli to from six to eight hours for the staphylococcus and appeared to depend upon the rapidity with which the bacteria were able to set up inflammatory changes in the kidneys. Only at the end of longer intervals of time—from six to 12 hours after injection—when inflammatory changes with hæmorrhages were well established, did the bacteria appear in the urine in any quantity, so that Dr. Streng is led to the important conclusion that the passage of bacteria through the kidneys is dependent upon the changes previously set up in them by the organisms or their toxins and that bacteria are not excreted into the urine by normal healthy kidneys. His experiments with the filtrated toxins show that only exceptionally are they able to give rise to a parenchymatous nephritis. Dr. Streng also makes a preliminary communication on the cachexia caused by the injection of bacterial toxins into rabbits.

Dr. J. Silfvast has concluded a series of experiments on the action of staphylococci on the lungs and finds that intratracheal injections of the organisms into rabbits are able to set up a pneumonic process in the lungs. Inhalation of the cocci produced a similar result only when the animals inhaled fine particles of charcoal at the same time. A reduction of the temperature of the chest appeared to further the pneumonic process. Dr. Silfvast also concluded from his experiments that the lungs possess a considerable power of destroying the invading bacteria and that the phagocytes—the alveolar epithelium and leucocytes—play an important part in their destruction.

The authors have evidently conducted their researches with thoroughness and have set forth their results in a clear and concise manner.

LIBRARY TABLE.

Tumours, Innocent and Malignant: their Clinical Characters and Appropriate Treatment. By J. BLAND-SUTTON, F.R.C.S. Eng., Surgeon to the Chelsea Hospital for Women, Assistant Surgeon to the Middlesex Hospital. Third edition, with 312 Engravings. London, Paris, New York, and Melbourne: Cassell and Co., Limited. 1903. Pp. 556. Price 21*s.*—This work well deserves the high reputation which it has attained. It deals with tumours in a fresh, unconventional manner and especially novel when it was first published was the abundant reference to the tumours occurring in the lower animals. In matters anatomical and physiological we have derived much valuable light from a study of the structure and mode of action of the organs of the lower animals, but the resemblances existing between the morbid processes in man and the rest of the animal kingdom had hardly been utilised at all until the appearance of the first edition of this book. It is true that John Hunter's researches into the region of animal pathology were numerous and important but much of his work was lost. Our knowledge of the etiology of tumours is very scanty and this applies alike to the innocent and malign growths, as the author points out; therefore this work does not devote to the discussion of this question space which can be more usefully employed otherwise; but, as we mentioned in reviewing the second edition, we should like to have his opinion on this difficult subject. The attention which Mr. Bland-Sutton has of recent years paid to gynæcological surgery is evidenced by the prominence given to new growths of the uterus and the ovaries, and we must acknowledge that he has thrown much light on an obscure subject. An important alteration in this edition is the separation of the myelomata from the sarcomata. They differ, indeed, in so many respects from the sarcomata that they deserve separate consideration but we think that there is an equal amount of reason for removing also the melanomata from the group of sarcomata. We are glad to see that the author has abandoned the name "epithelioma"; it has been used indefinitely of late years, for it has been applied to the columnar carcinomata as well as to the squamous variety and therefore it is far better to give up the word entirely. It is rather a pity to quote Kocher as having operated on 555 cases of "colloid struma"; the expression is sure to be misunderstood for the majority of the readers of the book will be unaware that "struma" in this place is merely the German for goitre.

Studies in Physiology, Anatomy, and Hygiene. By JAMES EDWARD PEABODY, A.M., Instructor in Biology in the Morris High School, New York City. New York: The Macmillan Company. London: Macmillan and Co. 1903. Pp. 332. Price 5*s.* net.—In the preparation of this volume the author has attempted to combine the following features. Emphasis is constantly laid on physiology, while anatomical details are given only so far as is necessary to make physiological processes intelligible. Hygiene is discussed at the end of the study of each system. The simpler principles of chemistry are discussed in order that physiology may be understood. Physiological facts are considered from a comparative standpoint and the historical development of each is referred to. Scientific terminology has been avoided unless common names fail to give sufficient precision. Instruction is given regarding the effects of alcohol and narcotics and in this connexion extensive quotations have been made from the most recent report of the Committee of Fifty on the Physiolcgical Aspects of the Liquor Problem. The book, which is intended as a manual of instruction for high schools and for the public, is very clearly written and the author has used every endeavour to secure freedom from errors. It is a very readable volume and the subject-matter is well arranged. The author's remarks on the care of the voice are well worthy of consideration. Colour-blindness is, however, irremediable, though a certain training in tints is, of course, practicable; from the remarks on this question at p. 307 a reader would suppose that colour-blindness could be corrected by training. The paper and print are excellent and the illustrations are for the most part good but the one of the human blood corpuscles (Fig. 43) cannot be included in this category. Some subjects appear to us to be treated

with unnecessary minuteness considering that the book is intended for the non-medical public.

The Pedagogue at Play. By G. M. A. HEWETT, Author of "The Open-Air Boy." London: George Allen. 1903. Pp. 296. Price 6*s*.—The author apologises in his preface for presenting for perusal so trifling a record of very ordinary doings. He has been tempted "to press in," first because he is always blundering up against the impression in the outer world that a schoolmaster is a sort of cross between an automatic machine and an iceberg and, secondly, because there seems to be very little record of the doings of ordinary men on ordinary holidays. These pages, however, require no apology for their production and certainly prove the first reason for their existence to be false. If any of our readers who are fond of sport and of descriptions of beautiful picturesque scenery dip into this volume they will find much to revel in. The English is good, the descriptions are breezy, the humour is ever-flowing, pure, and sparkling, and it is utterly devoid of morbid sentiment. The ten chapters mean delightful hours spent in the company of one who fully realises the art of enjoyment and who has tasted very fully of the pleasures of country life. Though many of the spots chosen have been sought out "in weariness of the ever-lasting presence of boy," we think that many a youngster, especially if he be a fisherman, will find much to satisfy him in Mr. Hewett's book, notwithstanding that the author does emphasise "the sort of joy that steals over the boy-ridden man when he finds himself for half a day turned loose on the grass with the harness off." In his chapter entitled "A Swiss Winter" he asks the question whether you want to renew your youth, whether you want to throw off 20, 30, or 40 years, whether you want to go through a spell of harmless but utter intoxication with no evil after-effects. There is but one answer to such a query and those of us who cannot know the joys of Grindelwald at its best may yet gain something worth having by following the author's glowing descriptions of places literally bubbling over with life and happiness. 'The world is so busy, even over its pleasures, that it does a man good now and then to steep his soul in utter idleness amid such surroundings as these." We quote from the book and we know that to the busy practitioner hours spent in the perusal of this volume will pass as those of playtime. The author of "The Unspeakable Scot" should make the acquaintance of Mr. Hewett's "Mac."

Danish Self-Taught with Phonetic Pronunciation (Thimm's System). Edited by W. F. HARVEY, M.A., formerly Universitetslektor at the University of Lund. London: E. Marlborough and Co. 1903. Pp. 120, crown 8vo. Price, wrapper 2*s*., cloth 2*s*. 6*d*.—This manual, completing the Scandinavian group of languages in Marlborough's "Self-Taught" Series, is designed for the use of students and to meet the general requirements of tourists, merchants, commercial travellers, and other visitors to Denmark. The vocabularies are in three columns headed—"English," "Danish," and "Pronunciation." The idea of the phonetic or third column is to give in an intelligible manner the pronunciation at a glance of Danish as it is spoken among the educated classes at Copenhagen so far as words can possibly convey the exact sound. The system of phonetics is so simple that those previously unacquainted with Danish can with its aid make themselves understood without difficulty. The editor is an acknowledged authority on the Scandinavian languages and literature. Dr. A. Brahde of Copenhagen, a philologist of high repute, has revised the vocabularies and elementary grammar, while the phonetics have been composed under the superintendence of Mr. J. Thrige also of Copenhagen. The book is both practical and useful and will enable students and others to acquire the language by home study; the simplified grammar will also prepare the way for a more advanced course. With the small volume is bound up an extract from an article entitled "In the Queen's Country," which appeared in the *Christian World* and which tells of Denmark's picturesque scenery, its friendly people, and its historical and literary associations. We congratulate the publishers on the production of another of these useful serial volumes.

Die Sterblichkeit der Haupt- und Residenzstadt Budapest in den Jahren 1901-1905 und deren Ursachen. (Mortality of Metropolitan and Residential Budapest in the years 1901-05 and its Causes.) By Dr. JOSEPH V. KORÖSY. Second (tabular) volume, part 1, 1901. Berlin: Puttkammer und Mühlbrecht. 1902. Price one mark.—At first sight it seems strange that Dr. Körösy should have been able to state the death-rate for the years 1901-05, but probably that is the title which it is intended to put over the whole five years' work when it is finished. According to the results of the census of Jan. 1st, 1901, the population of Budapest amounted to 703,448 (exclusive of military 16,484). Of this number 339,649 were males and 363,799 were females. As regards age, the greatest number were between 20 and 30—viz., 160,392 persons—and 14 persons were over 100 years old. As regards religion, Roman Catholics numbered 427,112 and next in order came Jews with 166,198. 417,617 persons were unmarried, 238,256 persons were married, and 47,575 were widowers, widows, or divorcees. 562,237 persons each dwelt in from three to ten rooms. In March and January the greatest number of deaths were recorded (1386 and 1381 respectively), while in September and October the lowest numbers were recorded (961 and 976 respectively). The total deaths for the year were 13,923. The chief causes of death were: diseases of the organs of respiration, 4682; "morbi constitutionales," 2493; diseases of the nervous system, 1766; diseases of the organs of digestion, 1537; infectious diseases, 1130; and diseases of the circulatory system, 1084. The list of diseases is printed in Hungarian and Latin and the remainder of the report is printed in Hungarian and German. Incidentally it affords a useful dictionary for those interested in the study of languages.

The Story of my Life, by Helen Keller, with her Letters (1887-1901) and a Supplementary Account of her Education by JOHN ALBERT MACY. London: Hodder and Stoughton. 1903. Pp. 441. Price 7*s*. 6*d*.—This is the autobiography of a most extraordinary woman—of a young lady who, although totally blind and deaf, has learned by the sense of touch to communicate with friends, to read, to write on the typewriter, and to speak French and German as well as English—in fact, of one who has broken down the barrier between herself and the outside world. The work has created some sensation in the United States and is one of the most remarkable records of the triumph of human endeavour over physical affliction. Mark Twain has said that "the two most interesting characters of the nineteenth century are Napoleon and Helen Keller." The book is in three parts. The first two, Miss Keller's story and the extracts from her letters, form a complete account of her life so far as she can give it. For the third part the editor is responsible, and in writing it he has had the advantage of the advice of Miss Sullivan—Miss Keller's friend and teacher; it is a further account of her personality and achievements. The book is a beautiful record clothed in expressive language of the wonderful perseverance of a pure-minded human being—a record of how one terribly afflicted has conquered and passed from darkness into light, from isolation to friendship, companionship, knowledge, and love. It is the story of one who has heard a voice which said, "Knowledge is love and light and vision," who is in love with noble things, with noble thoughts, and with the characters of noble men and women.

THE LANCET.

LONDON: SATURDAY, OCTOBER 24, 1903.

The Huxley Memorial Lecture.

THE subject selected by Professor KARL PEARSON for the Huxley Memorial Lecture is one which must appeal to the interest of all classes of society and his conclusions will be endorsed by all medical men who work much among the poorer classes. The title of his lecture was the Inheritance in Man of Moral and Mental Characters and its Relation to the Inheritance of Physical Characters, but his conclusions from careful inquiry suggest that a less cumbrous title would have been more attractive and equally appropriate, since they turn on the relative national advantages of education and of physical training with improved hygienic conditions. For the last six or seven years he has been collecting information in three directions—namely, first, an inquiry into the actual values of inheritance of the physical characters in man; secondly, a comparison of the inheritance of the physical characters in man with that of the physical characters in other forms of life; and, thirdly, an inquiry into the inheritance of the mental and moral characters in man. It is not necessary to reproduce the statistics upon which he has worked, since arrays of figures, though instructive, are often repellent. In the present instance they serve to demonstrate the truth of a contention often advanced in these columns—viz., the danger to the community of excessive attention to education, with comparative neglect of the general physique. Professor PEARSON is emphatic in his statement that no scheme of wider or more thorough education would bring hereditary weakness up to the level of hereditary strength in the scale of intelligence. This is another way of stating that we are what our forefathers have made us, that there is a certain hopelessness in trying to work upon raw material if the raw material is of poor fibre. In our public schools this elementary fact has long been recognised and acted upon, but the question is more widespread, since only a very small proportion of the community can enjoy the advantages calculated to produce a sound mind in a sound body. Clearly, however, from the statistics before us these two must be more widely conjoined to prevent mental and moral decadence in any race.

This, indeed, leads to the most difficult problem of sociology, since it involves an interference with the present freedom from control. Professor PEARSON maintains, although he admits the difficulties in the way, that the only remedy is to alter the relative fertility of the good and bad stocks in the community. The children who inherit poor mental, moral, and physical characters are apparently numerically outweighing those of superior powers and the result is a rapid levelling down which defies all efforts at improvement by education. Every practitioner is familiar with the large families living in cramped insanitary surroundings on poor wages; the poor man in adversity generally has numerous olive branches struggling for existence and handicapped from the outset by insufficient food and by overcrowding. The craft of forestry suggests thinning and weeding out to prevent stunted undergrowth from hindering healthy development and in SWIFT'S "Modest Proposal" a sufficiently savage method of weeding was suggested; but human beings cannot be treated like superfluous trees or kittens and the alterations of relative fertility in different classes of society must be antenatal. The prevention of improvident marriages might do some good but it would be a bold Ministry which would venture to introduce an Act of Parliament to render matrimony dependent upon any fixed weekly wage. Still, many of the employés of banks and city firms have to submit to a regulation which discountenances early marriages on insufficient means.

Professor PEARSON looks, however, to the upper rather than to the lower classes in fixing the responsibility for decadence. It is not so much the increase in the fertility of the latter as the diminished fertility of the former which tends to reduce the mental, moral, and physical standard. He states that for the last 40 years the intellectual classes of the nation, enervated by wealth or by love of pleasure, or by following an erroneous standard of life, have ceased to give us in due proportion the men wanted to carry on the ever-growing work of our empire, to battle in the fore rank of the ever-intensified struggle of nations. Can medical men in the ordinary course of their work do anything towards the solution of the difficulty? We venture to think that the influence of the medical profession is continually being exerted in directions which would meet with Professor PEARSON'S approval. For instance, advice on the subject of matrimony on the score of physical weakness, inherited or acquired, is frequently sought and indeed forms one of the most painful duties of a profession overburdened with responsibility. With the other side of the question, however—the encouragement of those who with advantage to the State might and should marry but do not—we have little to do. Indeed, the subject of the Huxley Memorial Lecture, though fascinating, can only in part be dealt with by the medical profession; it really can only be approached by modern statecraft. But there is one obvious conclusion to be drawn—viz., the need of greater expenditure on hygiene and physical training than upon mere education. It is to be hoped that the committee appointed to consider certain aspects of the alleged physical deterioration of the people will not lose sight of the importance of its bearing upon the mental and moral characters which must so largely influence national welfare.

The Vintage and its Relationship to Health.

THE question as to whether a vintage is or is not a success is of some importance to the public health. The terms used by the wine-grower to describe a vintage such as "a stout and full-coloured vintage," "a beautiful clean vintage," "fine quality distinguished by body rather than elegance," and "very thin and inferior," if

colloquial are expressive and often contain within them a meaning of hygienic significance. The success of a vintage is a matter for congratulation, not merely because it spells prosperity to the viticulturist and all who are industrially concerned, but because also it means that when plenty and quality are the rule a good, sound, and wholesome wine will be the result, while necessarily a rich, abundant harvest is calculated to reduce the opportunities of the adulterator. On the other hand, when the vintage fails, or partly fails, or the yield is small and the fruit is immature or perhaps attacked with disease, temptations may arise to adopt devices by which the wine may be made marketable. It is a pretty fair conclusion to draw, we think, that bad or inferior fruit will make bad wine or that fruit attacked by oidium or other disease will yield a more or less unsound product. This much importance, therefore, is to be attached to a vintage, that according to whether it is a success or a failure so will its influence be calculated to be for good or for bad upon the health of the wine-consuming public. There is yet another hygienic aspect of the quality of the vintage. In the years of abundance, when there is plenty of sun to ripen the grape and to produce much rich juice, the wines are generous in character, they are full, more invigorating, and contain more "vinosity" and alcohol than the wines of wet, sunless years, and such rich wines should, of course, be consumed in comparatively sparing quantities or, better still, be put aside until the remarkably softening and ripening influences of time are brought to bear upon them. The wines produced in our colonies, which are invariably richer and stronger than those produced in France or Germany, would lose much of the crude qualities which are characteristic of them were they left to mature. While these wines, be it said, have many excellent points they cannot at present compete as regards delicacy or *finesse* with the more classic wines of French growth. But the vintages of our colonies, owing to the steadier condition of climate and to an abundance of sun, are, as a rule, more certain and more regular than the French or German vintages and thus the wines of Australia are constant in character, always full, and always generous. Of a similar character are the wines of California Spain, Algiers, Greece, Turkey, and Persia. There is an undoubted future for our colonial wines and some day not far distant it is to be hoped that they may appeal to the connoisseur's taste more than they do now and be of a more refined character. Colonial wines at the present time are very popular, partly because they are cheap and partly because of their "vigorous" character. It has been said that the day of glorious vintages in regard to French wines has passed and that never again shall we see such exquisite wines as were produced in the Médoc, for example, in 1864, 1865, 1874, 1875, or even 1888 or 1889. We do not believe it. It is confidently to be hoped that the wretched weather which has prevailed in this country during this year, and in many of the finest wine-growing countries, may prove exceptional and that seasons of sunshine (than which no other agent is more essential to the health and the life of the grape) as well as those other beneficent meteorological conditions which marked the years of famous vintages will again contribute towards making the vineyards as productive as ever of wines of refinement and quality. In spite of indifferent seasons, however, ordinary table claret when procured through respectable channels has never been so good, so plentiful, and so cheap.

According to the latest accounts it is to be feared that the prospects of the present vintage which is just being gathered are somewhat cheerless and unpromising. The yield in general will be small and the year 1903 will not figure in the coming records of vintages as a year of much brilliance. White wines are a conspicuous failure, although some small success is promised in regard to the famous sparkling wines produced in the neighbourhood of Reims, owing to the spell of fine weather in September. Long-continued rains have damaged the vines of the Bordeaux districts and the crop is small. From Beaune comes a similar story, while the news from Jerez de la Frontera, where the heat has been intense and the season dry, is in favour of a fairly good vintage. Again, port will not rank high either in quality or quantity this year and the yield of wine along the banks of the Rhine and the Moselle is small and the wine is without any great promise of fine development. The harvest in the Charente is also small, owing to which circumstance probably much of the wine is being bought for direct consumption and will not reach the still at all; the yield of brandy, therefore, is likely to be small. Against all this we have the report that the vintages of South Australia and California are satisfactory as regards both quality and quantity.

The choice of a wine is a matter so frequently referred to the medical man by his patient that it may be well to recapitulate some of the facts about the composition and character of various wines as disclosed from time to time in our analytical columns. The soundness of a wine may be largely judged from its degree of acidity, which is commonly higher in white wines than in red wines. Moreover, as we have frequently pointed out, white wines as a rule contain decidedly more sugar than do clarets, although frequently a white wine is ordered because the reverse is supposed to be the case. Claret would appear to have, therefore, certain advantages over white wines for those suffering from diabetes or gout. A good, sound claret seldom contains more than 0·20 per cent. of sugar, 0·10 per cent. of acetic acid, and 0·20 per cent. of free tartaric acid, while sauternes, for example, frequently contain from 1·5 to 3 per cent. of sugar, about 0·10 per cent. of acetic acid, and from 0·30 to 0·50 per cent. of tartaric acid. A sound burgundy again contains rather more sugar than does claret, the amount of the acetic acid is about the same as that in claret, but the amount of tartaric acid is higher. Champagne ordinarily described as "extra dry" contains from 1½ to 3 per cent. of sugar, while a "brut" champagne—i.e., an unliqueured wine—contains about the same amount of sugar as does sound claret. The percentage of tartaric acid in champagne is decidedly high. Champagne, in fact, is rich in the salts of the grape which resolve into alkaline carbonates in the body. Many persons experience a sense of thirst after drinking champagne, probably for this reason. The ethers in champagne, with the exception perhaps of old sherry, exceed in amount

those in most white wines, a fact, coupled with its effervescent qualities, which makes it a rapidly diffusible stimulant and a sense of well-being is experienced much sooner after drinking champagne than is the case with most other wines. The wines of the Saumur district have improved very much of late; they closely resemble champagne but are lighter in character. As regards the dietetic suitability of red wines more attention, it seems to us, might be paid to their astringency which depends upon the tannin-like substances derived from the grape skin. It cannot be supposed, however, that red wines have a very marked tendency to produce constipation, for the presence of tartrates probably prevents any effect of this kind which might otherwise ensue. Red wines, and especially those of the burgundy type, have been observed to produce some blackening of the fæces, which may be due to the iron of the colouring matter of the grape skin, although it is conceivable that tannin might produce a similar effect and the amount of iron in red wines is according to our experience insignificant. White wines, including, however, champagne, contain relatively little tannin and tend to an aperient effect whilst causing little or no change of colour in the dejecta.

Though it may be doubtful whether in the wines of the same vintage and district any important differences in regard to their chemical composition exist, it is nearly certain that such important dietetic constituents as the alcohol, the sugar, the total acids, the ethereal bodies, the astringent principles, and the salts would vary in quantity according to whether the vintage could be described as good, bad, or indifferent. And since the quality of the wine is thus decided it follows that some hygienic importance, as we have said, attaches to the character of the vintage.

Toxins and Antitoxins.

THEORIES are the weapons of master-minds for the attack of scientific problems but with men of lesser calibre the theory is apt to become the master instead of the servant. The theory of immunity propounded by EHRLICH has been in his hands and also in those of most of his followers used only as a working hypothesis suggesting lines of research which have yielded results of the highest importance. Still, it is well that we should beware lest the theory distort our view of the facts and that we should be reminded, as by the critical paper by Dr. E. F. BASHFORD in THE LANCET of Oct. 17th, p. 1076, that the observed facts may possibly have another interpretation than that usually given. At the same time it is to be noted that Dr. BASHFORD is careful to explain that his criticism does not invalidate the routine prevalent methods for the standardisation and testing of antitoxic sera. EHRLICH'S theory of immunity, which formed the subject of the Croonian Lecture delivered before the Royal Society in 1900, has since been brought prominently before the medical profession in at least two series of lectures—in the Huxley Lecture by Professor W. H. WELCH and by Dr. A. S. F. GRÜNBAUM in the Goulstonian Lectures. It has certainly been fortunate in its exponents. If there be any lingering obscurity it is probably due, apart from the inherent difficulty of the subject, to two main causes. The first is the extremely technical language in which, almost of necessity, it has become involved; and the second is that the theory covers much more than that form of immunity due to the presence of antitoxic bodies with which it has been especially connected in the minds of practical physicians.

It has been well said in a recent work[1] that "the factors involved in securing immunity against infectious diseases are multiple in number and varied in character." Apart from those forms of immunity which rest on general causes such as the difficulty an organism finds in entering the body or the unsuitability of the channel by which it gains access, specific immunity to bacterial disease may, viewed broadly, be said to rest either upon the neutralisation of the poison by which an organism produces its pathogenic effect or upon the destruction of the micro-organism which has gained access to a susceptible host; this destruction may be due directly to cellular activity or indirectly to the action of bactericidal or lysogenetic substances. A valid theory of immunity should, of course, take into consideration all the factors which bring about that condition, and it is the great beauty of EHRLICH'S explanation that it connects by one common bond natural with artificial immunity and the various forms of artificial immunity, whether produced by antitoxins or by bactericidal bodies. Further, it does not invoke any abnormal forms of metabolism but refers the production of these various protective bodies to variations in the normal processes of cell nutrition. Necessary as it is for theoretical reasons to regard the various forms of immunity as a whole we may for practical purposes regard them separately, and indeed this separation is requisite when we deal with the facts as opposed to the theories of immunity. Fortunately, these facts relating to antitoxic bodies are comparatively simple and clear. In a very limited number of bacterial diseases practically all the symptoms of the disease can be produced by toxic bodies found in the filtered cultures of the specific microbe. By the repeated injection of these toxins in non-lethal doses susceptible animals may be rendered immune so as to be unaffected by many multiples of the original fatal dose. In the blood serum of these immunised animals a body is found which is capable of neutralising in vitro or in the animal body the toxin employed in the process of immunisation, so that a mixture of the blood serum and the toxin in certain proportions is no longer capable of producing pathogenic results. This neutralising body is antitoxin and neither it nor the toxin has been isolated: they are recognised only by their physiological properties. Such antitoxins are known in the case of tetanus and diphtheria, in a less definite manner in plague, and possibly, according to the recent work of Dr. A. MACFADYEN, they may be present in typhoid fever. Similar bodies are found in the blood serum of animals immunised against snake venom and the vegetable poisons abrin and ricin. In this very limited class of diseases or intoxications

[1] Vaughan and Novy: Cellular Toxins.

acquired immunity primarily depends on the presence of the neutralising antitoxin. It will be noted that this antitoxic material appears as the result of the injection of the corresponding toxin or may be transferred, as in the injection of antidiphtheria serum, from one animal to another. These facts do not furnish any ground for a general theory of immunity, as even in the diseases mentioned animals naturally immune need not possess any antitoxic body in their blood.

The relation between toxin and antitoxin, at one time regarded as a physiological one, is now considered to be of the nature of a chemical reaction similar to that which exists between an acid and an alkali. Of course, as our test for neutralisation is physiological and not chemical, as is pointed out by Dr. BASHFORD, there is room for a large margin of error, nor, since we are unaware that there is any phenomenon corresponding to precipitation in this interaction, can we expect the influence of mass to be absent in this any more than in other chemical changes. It is, however, possible to fix the neutralising relationship between toxin and antitoxin with sufficient accuracy to satisfy the requirements of practical medicine. It is difficult to believe that such intimate union as is implied by the effects produced by a toxin on the susceptible tissue should be of other than a chemical nature, and it is found experimentally that all toxins capable of giving rise to antitoxic bodies are so intimately combined with the cells that they cannot be separated by other than chemical means. EHRLICH'S explanation of these facts is that a toxin poisons a cell by uniting chemically with an unsatisfied affinity—a side chain—of some cell constituent which is required to carry on the ordinary metabolism of healthy cell life. The cells thus poisoned, and possibly also similar associated cells, if in process of recovery reproduce this side chain of the cell constituent with its potential toxin-combining affinity, so that once more the cell can carry on its normal processes. Under the constant stimulus of the toxin, as occurs in the process of immunisation, these toxin-combining side chains are not only reproduced but developed in excess of the cell requirements and are then cast off into the general circulation. These side chains, produced in excess, capable *ex hypothesi* of combining with the toxin and existing free in the circulation, constitute the antitoxin. There are many facts which go to show that antitoxin is the product of cell activity under the influence of a stimulus, generally that of the corresponding toxin, but in some cases that of non-toxic derivatives of the toxin, and the yield of antitoxin in an immunised animal may be increased by the injection of such a cell stimulant as pilocarpin. The widely extended use of antitoxin in the treatment of diphtheria makes these neutralising bodies bulk large in our conceptions of the means by which immunity is produced, but it is in but a very limited number of diseases that antitoxins can be shown to exist. The production and therapeutic use of antitoxic sera are, of course, based on solid experimental grounds. The means by which the relations between toxin and antitoxin are gauged have also an experimental basis, though theoretical reasonings have led to the development of the present practical methods.

Annotations.

"Ne quid nimis."

EPSOM COLLEGE.

WE are sure that many of our readers will be glad to hear that the council of the Royal Medical Benevolent College of Epsom has decided to take the necessary legal steps for the purpose of changing the official title of the institution to "Epsom College." It will be seen on reference to our advertising columns that an extraordinary general meeting of the governors is to be held on Wednesday, Nov. 11th, for the purpose of making the requisite alteration, since the amending Act of Parliament obtained in 1894 provides that the passing of a motion at a general meeting to the effect that the name of the College is to be altered will be all that is required to effect the legal change of title. Those qualified to judge have for many years believed that two words in the long title have militated against the success of the educational side of the institution. "Medical" certainly conveys the idea that the College is a "class" school and almost all persons nowadays grant that schools for the children of members of a single profession are undesirable; and the term "Benevolent" serves to stamp all scholars as being in receipt of an education more or less of an eleemosynary character. As Epsom College contains a very large number of pupils who pay full fees, many who are not sons of medical men paying as much as 75 guineas a year, the word "Benevolent" applied to the school as a whole is certainly misleading. THE LANCET was probably the first to take exception to this word, for in the year 1851, when the late Mr. Propert inaugurated this noble work, the following appeared in our columns: "We wish then the proposal of Mr. Propert good speed. We should like to see the term 'benevolent' omitted from the title, but for the objects of the institution, whether for eleemosynary or educational purposes, we have but one word and one thought—that of hearty coöperation and support." Soon after this a rumour was circulated that it was proposed to make the College a class school, and as a consequence we wrote in a leading article on Nov 29th, 1851, as follows: "It has gone abroad as an objection to the scheme that the school will not only be exclusively for the sons of medical men but for those sons only who are intended for the profession. The idea is monstrous. We have authority for stating that the school will not be confined to the sons of medical men, but the foundation will be exclusively for the orphans and sons of distressed members of our own profession, whatever be their future destination." The advertisement shows that in proposing to change the title the council is not unmindful of the importance of the charitable side of the institution—namely, the giving of pensions to 50 aged medical men or to their widows and the provision of board, education, and clothing free of charge for 50 foundation scholars the sons of medical men in distressed circumstances. It is proposed to pass a standing order of the council directing that in documents issued from the office in London the following words shall appear immediately after the title: "Established in 1855 as a public school with a Royal Medical Benevolent Foundation." The idea appears to be a happy one, for it not only traces the institution under its new title of Epsom College back to its foundation close upon 50 years ago, so that friends of the old title may easily recognise it under the new one, but emphasis is laid upon the fact that a great medical charity is combined with a public school. This fact was never clear under the old, misleading title of "Royal Medical Benevolent College,"

since the granting of pensions cannot by any stretch of the imagination be associated with a *college*. There is one other side to the question and it would have held good even if the College had contained only foundation scholars: it is not true charity constantly to remind those who, owing to adverse circumstances, have been compelled to receive a gratuitous education that they have been to a benevolent school.

KING EDWARD VII. SANATORIUM.

ANOTHER stage will be reached in the progress towards the realisation of the King Edward VII. Sanatorium for Tuberculosis on Nov. 3rd when the foundation stone will be laid by His Majesty the King at Lord's Common, Easebourne, Midhurst, Sussex. The advertisement for the best essays and plans appeared in THE LANCET of Jan. 4th, 1902, between pages 36 and 37 and the name of the donor of the £200,000 for the sanatorium, Sir Ernest Cassel, K.C.M.G., was announced in our columns on Jan. 11th, 1902, p. 111. The result of the prize competition for the best essays and plans was given by us on August 9th, 1902, p. 369, and the three prize essays and plans were published in THE LANCET of Jan. 3rd, 1903. In our issue of May 16th, 1903, p. 1391, we stated that the site chosen had been acquired from Lord Egmont at Lord's Common, Easebourne, six miles south of Haslemere and about three from Midhurst, and that it was 150 acres in extent. Midhurst is about 64 miles from Waterloo station (L. & S.W.R.) and the time occupied by the journey is from two and a half to three hours.

THE DEATH OF MISS HICKMAN.

THE body of Miss Hickman was found on the afternoon of Sunday, Oct. 18th, in one of the inclosed plantations of Richmond Park in a condition which leaves no doubt that it had lain there during the whole, or almost the whole, of the period which has elapsed since her disappearance from the Royal Free Hospital on August 15th. The inquest which is being held upon the remains will submit to the test of open inquiry and cross-examination such information as may be available as to the last occasions upon which the deceased lady was seen alive and to a considerable extent, if not in every detail, should elucidate the mystery of her fate. The mere discovery of her body in such circumstances has served to dispel the more distressing and alarming of the theories which have been suggested and circulated. To some extent also an explanation may be afforded before the coroner of the fact that in a public park and pleasure resort within eight miles of the centre of London the dead body of a person of whose disappearance everyone is aware may lie, practically unconcealed, for more than two months. It is true that the public are excluded by the regulations of the park from the wood or plantation in question and that owing to the preservation of game some care is no doubt exercised to enforce the rules laid down. It was not, however, in any way physically inaccessible and, as a matter of fact, the small boys who made so grim a discovery while looking for horse chestnuts had no difficulty in entering or leaving it. That Miss Hickman had been seen in the park was one of the most tangible of the many rumours regarding her movements after leaving Gray's Inn-road and the past residence of her family in the neighbourhood gave a certain colour of probability to the story. The fact, however, remains that neither police nor parkkeepers, either in the exercise of their ordinary duties or in consequence of the suggestions put forward, made a discovery which would have spared a long period of anxiety to those upon whom the terrible period of suspense and the complete absence of information have weighed most heavily. The matter may tend to prove the limitations to which investigation is necessarily subjected upon such occasions rather than to show that want of care or intelligence can be attributed to those concerned; the fact, however, of the presence of a corpse having so long remained undiscovered in such a place will remain as one of the conspicuous features of a tragedy which has aroused the sympathy and wonder of the whole country. To the bereaved relatives and friends of Miss Hickman we tender our respectful condolence in their sorrow which has now lost the element of suspense together with whatever faint hope may have hitherto survived. At the inquest which was opened on Oct. 21st before Mr. M. H. Taylor, coroner for Mid-Surrey, medical evidence was given by Dr. M. H. Gardiner and by Mr. A. J. Pepper that no signs of death from violence were found at the post-mortem examination. The result of the examination as regards the cause of death was entirely negative. The inquiry was adjourned to Nov. 5th.

THE HATCHING OF CHICKENS FROM PRESERVED EGGS.

IN a letter from a correspondent published in our present issue attention is again called to the remarkable preservative effects on eggs of silicate of soda. Some months ago[1] we referred to a statement which had been made that a chicken had been hatched from an egg which had then been preserved for 12 months. Our correspondent endeavoured to hatch eggs which had been preserved for three months. This he entirely failed to do but he found that the eggs, even when they had been incubated for over three weeks, remained perfectly fresh and could not be distinguished from recently laid eggs. He points out that if the preservative effect of the silicate of soda is due to the formation of an impermeable substance in the shell of the egg—and there seems no reason to doubt this explanation—then it can hardly be expected that the chick will develop unless some method is adopted in order again to render the shell permeable to air. Experiments in this direction would be of great interest.

MORAL DELINQUENCY IN CHILDREN.

IN an annotation which was published in THE LANCET of July 18th last (p. 175) reference was made to the observations and cases recently reported by Dr. A. McLane Hamilton concerning insanity and moral delinquency in children. In the *Daily Express* of Sept. 25th an account was given of a little girl who was the subject of murderous tendencies of a peculiar sort. The child is described as "a bright-eyed girl of nine, innocent-looking, with a happy smiling face," who had a propensity for luring little boys to a brook and throwing them in and leaving them to drown. Twice during the week preceding her trial she had sought to carry her murderous instincts into effect. Some time previously she lured a boy six years old and pushed him into a stream but after watching his struggles for some moments she helped him out again. For this deed she was kept in close confinement for ten days and almost her first act on regaining her freedom was to entice a little boy aged three years to a brook, to throw him in, and to run away. By the merest chance the incident was witnessed by a man who was working near and the little one was rescued. She had attempted to drown another child in the same way. A curious absence of the sense of remorse was exhibited by this youthful criminal. Questioned by the magistrate she is said cheerfully to have admitted that she threw children into the stream but she could not say what prompted her to do it. Apparently, all motive was lacking except the innate instinct of

[1] THE LANCET, May 16th, 1903, p. 1393.

murder. That the child was mentally abnormal was shown by the evidence of her mother. "From a very early age she had been a source of endless trouble to her—disobedient, wilful and mysterious in her ways, and developing instincts of the most amazing character." On the magistrate making the order that she should be sent to an industrial school, where she was to remain till she was 16 years of age, she manifested no concern. Her composure was not disturbed in the least, so the report states, by the strange surroundings of the court, the presence of policemen, the recital of her misdeeds, or the prospect of a seven years' exile from home and from her mother, and when she was taken away in the charge of a constable she looked quite innocent. Her intelligence is said to be somewhat dull but she exhibits none of the characteristics of ordinary insanity—mental excitement or depression, incoherence, delusions, hallucinations, or stupor. Possibly, a long sojourn in a reformatory, prolonged education and moral training, the influence of religion, and the teaching of some useful handicraft might contribute towards the amelioration of such a case. The advent of puberty may, however, be marked with recurrence or disappearance of bad symptoms.

NEW ENTRIES AT THE MEDICAL SCHOOLS.

WE have not as yet received from all the medical schools of London and the provinces complete returns of the number of students who have entered their names for a full course of medical study during the year 1903-04 and we cannot therefore judge with certainty as to the increase or decrease in numbers. From the figures already to hand, however, London will probably show a slight increase, while the provinces may show a decrease. In London the most notable increase is at St. Mary's Hospital Medical School, where the figures are 42 as against 26 for the session 1902-03. St. Thomas's Hospital Medical School had 42 new entries last year and has 48 this year. The London School of Medicine for Women, which has 36 new entries this year, had 28 last year. One of the dental hospitals of London shows an increase, while another shows a falling off. In the provinces, so far as the figures that we have already received show, there has been a falling off all round with the exception of the Owens College, where the new entries were 48 last year and are 51 this year, an increase of 3. We hope to be able to publish a complete table next week.

THE CARE OF PAUPER CHILDREN.

ONE of the most serious matters with which the Poor-law concerns itself is the problem of preventing the children of paupers from following in the footsteps of their parents and the last few weeks have been more than usually prolific in discussion of this vital question. Much has been said for and against the various systems of dealing with the needs of the children and while there is now practically universal agreement that the workhouse atmosphere is ill suited to the development of a sound mind in a sound body there is no uniformity of opinion as regards the selection of a substitute. Schools, scattered homes, collected homes, "boarding out"—each of these has its enthusiastic supporters armed with abundant evidence in favour of the cause. Some time ago we had occasion to notice with approval the Poor-law Schools Exhibition held in the Church Hall at Westminster and we observe that the children who then displayed their capabilities as gymnasts have again been supplying, at swimming competitions held in the Westminster baths, proof of their physical fitness. What has been called the "Sheffield system"—that of scattered homes—was reported on at the North Midland Poor-law conference by the clerk to the Sheffield union who assured his auditors that they might be certain of one thing at least—namely, that the children who passed through the homes did not return to the workhouse. At Plymouth, too, homes of this class seem to have been found to be satisfactory. That there is also something to be said for a colony of cottage homes is evidently believed by the Ecclesall Bierlow guardians for whom the foundation stone of a collection of buildings of this class was recently laid at Bole hill Lane near Sheffield. The Right Hon. W. H. Long, the President of the Local Government Board, who assisted at the proceedings, took the opportunity of explaining his own position in regard to these different methods. He was, he said, constantly being pressed to lay down a hard and-fast rule as to the measures which guardians should take in connexion with what he described as "this the most important question of Poor-law administration." He had refused to accede to such a request for two reasons, the first of which was that he had never been able to satisfy himself sufficiently that one system was superior to the rest and the second was the confidence he felt in the ability of guardians as a whole to turn their local knowledge to account in deciding which method was best adapted to the special needs of their district.

INTESTINAL ANASTOMOSIS.

ANY difficulty which a surgeon may experience in performing intestinal anastomosis can in no way be attributed to any lack of methods of carrying out this operation presented to his choice. Up to the present some 250 varieties of modes of uniting two pieces of bowel have been described but we should hardly like to assert that they have all been carried out on the living patient, for probably many of them have never been employed in practice. They range in complexity from the simple suture to the ingenious forceps of Laplace and include an immense number of mechanical appliances. There are still many advocates of simple suture—in fact, we consider that we should be justified in saying that this method is used by the majority of surgeons. The essentials of a good method of intestinal anastomosis are that it should be, in the first place, trustworthy and, in the second place, easily and rapidly applied. Both of these conditions are fulfilled by the simple suture. If carefully performed no other method surpasses it in security and with a little practice the application of the stitches does not take much more time than many of the methods especially designed for speed. Moreover, the requirements are obtainable everywhere; if necessary an ordinary sewing needle and cotton can be readily sterilised and employed. In spite of the claims of the simple suture there has been a constant endeavour to obtain some method which can be more rapidly applied. Maunsell's method was ingenious but it inflicted an additional wound on the bowel and it is now, we believe, but little used. In most of the other methods some mechanical arrangement is employed to facilitate the junction of the two portions of bowel and of these Murphy's button is the best known. It is capable of uniting very satisfactorily two portions of bowel and it can be very rapidly applied after a little practice. There is to Murphy's button a very great objection. A foreign body—the button—is left in the bowel and it may be retained there for many weeks or months and though its downward progress may be watched from day to day by means of the x rays and a fluorescent screen, yet its retention for a lengthy period cannot but cause anxiety to the surgeon. To eliminate this difficulty of a foreign body and yet to retain the convenience of a mechanical support various absorbable devices have been tried. We believe that Mr. A. W. Mayo Robson's decalcified bone bobbin was the earliest of these and various modifications of it have been introduced. The latest of these has been invented by Dr. A. MacLennan of Glasgow, who a few years ago devised two other methods. His present invention is certainly

ingenious and from *a priori* considerations we should expect it to prove successful. It is a grooved bone bobbin and by means of ligatures the peritoneal surfaces of the two portions of bowel are kept in contact on it. Various sizes of bobbin are made so that one suitable for any particular case may be employed. Judging from the description we should think the process would be simple and speedy but whether it will supersede the simple suture remains to be seen. For the full account of the bobbin we refer the reader to the article published at p. 1156 of our present issue.

WORKHOUSE NURSING AND THE PROPOSED "QUALIFIED NURSE."

AT a meeting of the Hospitals Association which will be held in the Governors' Hall, St. Thomas's Hospital, Albert Embankment, S.E., on Thursday, Oct. 29th, at 4.30 P.M., a discussion on the report of the departmental committee on nursing appointed by the President of the Local Government Board will be opened by Miss Gibson, matron of Birmingham Infirmary, and Dr. T. D. Savill, formerly medical superintendent of Paddington Infirmary. Tickets of admission may be had on application to Mr. Sydney Phillips at St. Thomas's Hospital.

PLACENTAL TISSUE AS A GALACTAGOGUE.

IN THE LANCET of Oct. 3rd, p. 984, our Paris correspondent called attention to the fact that M. Chaleix-Vive has carried out a further series of observations upon the value of the administration of placental tissue to nursing mothers for the purpose of increasing the supply of milk. In the year 1898 M. Iscovesco published some experiments tending to show that placental tissue produces such an effect when given in small doses, whilst a very interesting paper upon the whole subject appeared last year in the March number of *L'Obstétrique* from the pen of M. Bouchacourt. In these days of organotherapy it is interesting to note that placental tissue or placental juice played an important part in the pharmacopœias of 100 years ago. Indeed, much earlier than this these substances were held in great esteem by many primitive people for the treatment of the most varied disorders. As might be expected the placenta was considered of especial value as an aphrodisiac and in the treatment of sterility in the female, whilst it was a common remedy in cases of epilepsy, apoplexy, and infantile colic. In the last disease the cord was also employed and a piece of it powdered was either given internally or placed as a poultice on the child's abdomen. No doubt on homeopathic principles a piece of placenta was often administered to the mother to prevent the retention of the after-birth or membranes after delivery, and amongst the Chinese it played an important part in the treatment of chlorosis. In this connexion it is interesting to recall the investigations of Stieda who has attempted to show that severe chlorosis is associated with imperfect development of the genital organs and breasts. Amongst the natives of the Philippine Islands it is still the custom for the mother after her delivery to burn the placenta, to collect the ashes, and to swallow them with a little water so as to insure the health of her child. The custom almost universal amongst the lower animals of eating the secundines is well known and the observation of the fact that it is followed by no ill results may well have led the primitive savage to employ the after-birth both as a food and a medicine. Various attempts have been made to explain this curious custom. It has been attributed to the promptings of hunger, to the desire on the part of the animal to hide all traces of its recent confinement so as to protect its newly born young from their enemies, or to the natural instinct that leads the mother to remove all traces of blood and dirt from her young and from her lair or nest. In administering the placental tissue as a galactagogue M. Bouchacourt used a preparation which he called "chorionine. This is obtained by washing the minced placenta of the sheep in running water and then submitting it to pressure. M. Chaleix-Vive has employed a glycerine extract of fresh sheep's placenta and reports that he has obtained very good results by its use. In endeavouring to estimate the value of this latest development of organotherapy the chemical composition of the placenta is a point of much interest. The recent researches of Sfameni and others have largely increased our knowledge upon this subject. He has shown that freed as far as possible from blood the human placenta contains a considerable quantity of phosphorus, phospho-carnic acid, various soluble albuminous bodies in small quantities, and salts of potassium and sodium, the latter in excess. In order to come to any real conclusion as to the therapeutic value of this tissue analyses of both the dried extract and of the glycerine extract should be carried out. No doubt such analyses would show that they contained most of the above substances. If this were so then it would be difficult to escape the belief that equally good results could be obtained by the administration of extracts of approximately the same chemical composition obtained from any other tissue of the body. A good deal of further evidence will be required before we can accept the statement that placental tissue has any definite specific action as a galactagogue. If the conjecture, however, for at the present time it can hardly be called more than a conjecture, that the placenta has an internal secretion should turn out to be a true one then it may well be that placental tissue will play an important part in the future treatment both of maternal and of fœtal diseases.

PUBLIC HEALTH IN NATAL.

NATAL became a British colony in 1856 and in 1893 it was provided with a new constitution, a governor, a ministry, and a legislative assembly. It was, however, only in 1901 that the first Public Health Act of Natal was passed. The Act became law in September of that year and one of its results is the publication of the first annual report of the department of public health, dealing with the events of the year 1902. In this report Mr. Ernest Hill, the health officer of the colony, candidly acknowledges that the numerical returns which form the basis of his statistics "are deficient in many respects because of the different systems of registration or the absence of any." Under the new Act births and deaths among natives are registered, but for statistical purposes the returns are of no value because the number of the population is not exactly known and the cause of death is assigned according to the statement of natives only. Even in registering the deaths of Europeans there is much laxity because no medical certificate is required, and the report states that in some parts of the colony it is not unusual for a medical practitioner to give a certificate as to the cause of death of a person whom he had not seen during life. Subject to these reservations Mr. Hill has compiled several tables and charts showing rates of mortality from various causes. The total "European" population of the colony has been taken as 74,600 persons, of whom 51,420 were in the towns and 23,180 were in the country. Among the total "European" population there were 1078 deaths—i.e., 14·4 per 1000—and 3086 births—i.e., 41·3 per 1000. For the town populations the death-rate was 16·1 per 1000 and the birth-rate was 33·1 per 1000; for the country population the death-rate was 10·7 per 1000 and the birth-rate was 59·5 per 1000. Among the "European" population the death-rates per 1000 from tuberculosis and cancer were 1·4 and 0·53 respectively. The local authorities show a conspicuous disregard of such questions as the removal and proper disposal of night soil and rubbish, the abatement of

offensive and dangerous nuisances, and the supervision of slaughter-houses, cowsheds, and dairies. Enteric fever has since the war assumed a considerable degree of importance in places where it was previously almost unknown. Plague appeared in Durban at the beginning of December and 15 cases occurred during that month. Tuberculosis and syphilis are said to be increasing among the natives and a beverage called "tshimeyana," the nature of which is not described, is said to be producing serious effects among them.

THE CASE OF DR. LACHLAN GRANT.

THE latest development in the matter of the Ballachulish quarries dispute is that the quarrymen held a meeting on Oct. 5th at which certain proposals submitted to the directors of the company were read. Of those which particularly interest us from a medical point of view were (1) that the interdict against Dr. Lachlan Grant should be withdrawn; (2) that the medical appointment should be in the men's hands; and (3) that no deductions were to be made for medical attendance without the men's express consent. Among other proposals an increase in wages was asked for—viz., that labourers' wages should be increased in winter to 20*s.* and in summer to 22*s.* per week, while quarrymen should be paid as in other slate quarries—viz., "30*s.* per week in failure of contract." The above proposals were considered by the meeting and were carried with applause. On Oct. 8th the manager posted up a notice at the quarries informing the men that he had succeeded in arranging various terms with the proprietors of the quarries among which were the following. That the men should resume work on Oct. 12th under the same rules and conditions as existed in the works on resumption of work in January, 1902, "excepting that no doctor's fees will be collected unless it is otherwise arranged between the men and the manager." Wages were to be 23*s.* per week for quarrymen, with powder allowed, and 20*s.* a week for labourers all the year round. These proposals were considered by the quarrymen on the evening of Oct. 8th and the meeting unanimously refused to accept the terms offered. The men urged that only one point was touched upon in the company's notice—viz., the wages question—and the question of the medical man was left unsettled. The men are still standing firmly by Dr. Grant, as they have been doing for the last 15 months, and for nearly ten months they have been locked out, but up to now practically all of them have obtained work somewhere else so that no great loss has been incurred by them. The company has conceded one point in proposing that the men should be allowed to start work without insisting on deductions for medical attendance and medicine. We may therefore hope that if the men find themselves able to continue their loyal attitude towards Dr. Grant the company will eventually concede the demands of the men on this point also.

CLEANSING OF THE PERITONEUM.

IN the Mirror of Hospital Practice in this issue of THE LANCET is the report of a case of removal of an ectopic gestation by Dr. D. Lloyd Roberts. In his remarks on the case Dr. Lloyd Roberts expresses a preference for irrigation in cleansing the peritoneum when many small clots and much fluid are present. For many years the relative values of sponging and irrigating for the purpose of cleansing the peritoneum have been discussed and even now no unanimous decision has been reached. Irrigation at first sight appears to be the more likely to prove useful for it would seem that it would not be difficult to wash out the whole peritoneal cavity, but experience shows that it is practically impossible in most cases to cleanse the peritoneum by this method; this is very obvious when at a necropsy an attempt is made to wash out the peritoneal cavity. The innumerable pouches shelter much of the material which it is desired to wash away, in spite of very thorough irrigation. Exceptionally, however, there occur cases in which irrigation is capable of efficiently cleansing the cavity. These are instances where much fluid is present and very little adherent exudation, as in the case to which we have referred above. Especially is this so if the fluid is not primarily septic, as in cases of ectopic gestation, for then it matters comparatively little that some of the fluid should be left behind in the peritoneal cavity. In cases, however, where there is much adherent exudation on the surface of the bowel irrigation is of very little value, for it fails utterly to displace the adherent flakes. In these cases swabbing must be employed but the area of peritoneum is so large that to cleanse thoroughly the whole surface is a very tedious task. Fortunately the peritoneum possesses the power of dealing with a certain amount of microbic infection and no surgeon will maintain that by any method that we possess is it possible to render aseptic the peritoneum when its whole surface has become infected.

THE UNCONTROLLED USE OF PRESERVATIVES IN FOOD.

IT is a very regrettable fact that this country is still without any legislative control over the use of antiseptics for the preservation of food and the practice goes on to all intents and purposes unchecked without any regard to the mischief that may be done to the infant, to the invalid, or indeed to the healthy. It is now very nearly seven years since THE LANCET in the report of its Special Sanitary Commission on the Use of Antiseptics in Food drew attention to the necessity of placing some restriction on the kind and amount of chemical agents used very widely for the purpose of preserving food. It is just over four years ago—that is, in July, 1899—that a departmental committee was appointed to inquire into the subject. This committee occupied a considerable amount of time and it must be admitted that the members had a very big task before them. Finally, in November, 1901, very nearly two years ago, the conclusions and recommendations of this committee were made public by the usual channel of a blue-book. Since then absolutely nothing has been done to embody these recommendations, good and reasonable as they are, in the form of a statute and the art of preserving foods still goes on without let or hindrance. It is true that prosecutions have been undertaken but their success has depended upon individual opinions which in many cases have failed to convince the magistrates. The subject ought long ago, as we have urged again and again, to have become part and parcel of the provisions of an Act. We repeat that it is disgraceful that in spite of the careful consideration which, during two years, was given to the question by a committee of experts and of the fact also that its conclusions were made known nearly two years ago, we are still without the necessary statutory powers to control the practice of preserving foods. The delay is unjustifiable and perilous to the health of the community and we fail to see the reason for it.

THE SENSIBILITY OF THE VISCERA.

SOME interesting observations on the sensibility of the viscera have been made by Dr. K. G. Lennander and are recorded in the *Mittheilungen aus dem Grenzgebieten der Medicin und Chirurgie*, Band x., 1902, Hefte 1 und 2. As a result of an investigation of various viscera during the course of cases of operation he states that the parietal peritoneum is very sensitive to all operative measures but that the intestinal canal, the mesentery, the stomach, the anterior margin of the liver, the gall-bladder, the urinary bladder, and the parenchyma of the kidney are completely insensitive to all manipulative procedures and even to the

thermo-cautery. The parietal peritoneum itself appears to be sensitive only to painful and not to tactile or thermal stimuli; this sensibility to pain Dr. Lennander attributes to twigs of the intercostal nerves in the subserous areolar tissue. The lungs and the anterior wall of the trachea are also insensitive. The mucous membrane of the rectum is likewise insensitive to all ordinary stimuli but if its lumen be distended to a diameter of three and a half to four centimetres a desire to defecate is produced. Again, the testes and epididymis are insensitive while their coverings are sensitive. Dr. Lennander infers that organs which are innervated from visceral nerves alone are insensitive, while those having branches supplied to them from somatic nerves are sensitive. There is perhaps little that is new in these observations of Dr. Lennander or in his interpretation of them but they lend strong support to the view that at any rate some sensations of pain depend upon nerve fibres anatomically distinct from those subserving tactile and other cutaneous sensations, since the parietal peritoneum is apparently sensitive to painful stimuli only. At the same time that diseased or injured viscera may give rise to painful sensations interpreted locally—that is to say, apart from, or in addition to, referred pain and tenderness—is a matter of daily observation and this variety of pain is usually regarded as due to an exaggeration or augmentation of the common sensibility of the part, of which in health there is no conscious appreciation.

DETERMINATION OF FAT AND TOTAL SOLIDS IN MILK.

IN the August number of the *Archives of Pediatrics* Dr. Henry L. K. Shaw of Albany, New York, gives details and results of a number of comparative experiments made with different processes for the determination of the fat and the total solids in milk. He first describes the Babcock method of determining fat, a method which, he says, is distinctively American and is widely employed by American dairymen. It requires a centrifuge and at his suggestion a small one has been manufactured for the use of medical men. The process is as follows: 17·5 cubic centimetres of milk are first measured into the test bottle and 17 5 cubic centimetres of sulphuric acid of specific gravity 1 082 are then slowly added. The milk and acid are thoroughly mixed by a rotary motion, placed in the centrifuge, and whirled for four minutes. Boiling water is then added by means of a pipette until the lower part of the column of fat comes within the graduated scale on the neck of the bottle. A second whirling for one minute completes the separation of the fat. The fat thus obtained should form a clear yellowish liquid quite distinct from the acid solution and the height of the column is then read off. The Marchand lactobutyrometer, he says, is better known abroad than in America. It consists of a glass tube closed at one end, with a narrowed segment near the open end. The narrow portion is graduated into 30 divisions. The tube is marked so that the lower portion shall contain five cubic centimetres of milk, the middle portion five cubic centimetres of ether, and the upper portion five cubic centimetres of alcohol. The milk is first introduced up to the point indicated in the tube and a few drops of a 10 per cent. solution of sodium hydrate are added, after which the ether is added and mixed, and the alcohol is then added and mixed. The tube is now immersed in a water-bath at 100° F. for 15 or 20 minutes and the amount of fat is read off from the scale. The other methods or tests made use of were the Gerber method, the Lefferman-Beam (? Leffmann-Beam) test, and the Holt cream gauge. The control estimations of fat, to be taken as the standard, were made in the laboratory of the New York State Department of Agriculture by the Adams extraction method. This consists in spreading the milk over absorbent paper, drying and extracting the fat with ether in a Soxhlet apparatus. The ether is removed by distillation and the fat in the flask is weighed. The process is a good one but is too tedious and complicated for medical use. A comparison of the results of the experiments, 30 in number, showed that the Babcock test could be relied on for accuracy and was the most suitable of all for medical use. Dr. Shaw estimates the total solids from the specific gravity of the milk and the percentage of fat, using a special form of slide-rule for the performance of the necessary calculations.

MEDICAL CONGRESSES IN ITALY.

THE Thirteenth Annual Congress of Internal Medicine will take place this year at Padua from Oct. 29th to Nov. 1st under the presidency of Professor Guido Baccelli. In addition to other subjects which may be brought forward by any of the members of the Congress three selected themes have been put down for discussion—namely (1) the Influence of Individuality in the Pathogenesis and the Etiology of Disease, to be opened by Professor A. de Giovanni and Professor L. Giuffré; (2) Immunity in Acute Infective Diseases, to be opened by Professor Lucatello and Professor N. Pane; and (3) the Medical Indications for the Interruption of Pregnancy, to be opened by Professor Zaggri and Professor V. Ascoli. The Congress of the Italian Pathological Society was held in Florence from Oct. 5th to 7th under the presidency of Professor Pestalozza. An important paper was read by Professor Foà upon Cytotoxic Serums. Various papers were contributed by the Roman school; amongst others one upon Sclerosis of the Coronary Arteries by Professor Marchiafava, another on the Alterations of the Nerve Centres consecutive to Infantile Cerebral Lesions by Professor Bignami, and another on the Acute Ascending Paralysis of Landry by Dr. Nazari. Before closing it was decided to hold the next Congress in Milan in the spring of 1905 and to endeavour to transform the society from a national into an international one, Professor Foà and Professor Golgi being appointed to approach the Pathological Association of Germany with the object of bringing this about. At Messina there will be held in the first half of November the National Congress for the Hygiene of the Alimentation and Care of Early Childhood.

REPORT OF THE MINER'S PHTHISIS COMMISSION IN SOUTH AFRICA.

THE report of the commission which was appointed in 1902 to inquire into, and to report on, the disease commonly known as "miner's phthisis" has now been issued together with the minutes of the proceedings and the minutes of evidence. The terms of reference were as follows: (1) to inquire into the extent to which miner's phthisis prevails; (2) to ascertain the cause of the disease; and (3) to make recommendations as to the preventive and curative measures which should be adopted either by legislation or otherwise. The evidence adduced and the deductions therefrom form interesting reading. It appears that the disease is largely confined to miners who have worked for some time in metalliferous mines and is chiefly noticeable among the rock drill miners of the Witwatersrand gold mines It was further shown that the disease prevails to a very great extent and that a high mortality is due to it. The commissioners were fully convinced that the pathology of the condition is a silicosis produced by the inhalation of minute particles of inorganic matter with which the atmosphere of the mine is naturally charged. This conclusion was the only one to be expected and the chief interest in the report lies in the suggestions which are made for the protection of the workmen. Valuable investigations were made as to the composition and quantity of the air

circulating throughout the working places in the mine and as to the composition of the gases given off during blasting operations in varying circumstances. It was also found that the sanitary state of the mines left much to be desired and that the conditions under which the miners lived were not satisfactory. Efficient "change houses" were not provided in many of the mines, so that the men could not obtain facilities for washing and for changing and drying their clothes. The commissioners therefore are of opinion that it is urgently necessary to prevent as far as possible by means of sprays and jets the discharge of the minute angular particles of dust into the atmosphere of the mine; to supply the working places throughout the mines with air in sufficient quantities and in such a manner as to render harmless, and to sweep away, the vitiated atmosphere; to maintain underground workings in a clean condition and to institute for this purpose a suitable sanitary system; to provide "change houses" properly warmed and within reasonable distance of each shaft; and to avoid the use of low flash-point lubricants in the air cylinders of compressors. These are practical points the enforcement of which would go far to mitigate the danger to which the workmen are exposed. It is to be hoped that regulations formed with a view to carry out these suggestions will be formulated as speedily as possible.

THE INFLUENCE OF SEASON ON THE OCCURRENCE OF GLAUCOMA.

THE influence of temperature and of season on the supervention of attacks of acute glaucoma is the subject of a communication by Dr. Kurt Steindorff to the *Recueil d'Ophtalmologie* for September. This seems to be a point in the etiology of glaucoma to which but little attention has been directed. It is not mentioned in Norris and Oliver's "System of the Diseases of the Eye" under the article on glaucoma written by Mr. Priestley Smith. Fuchs, Panas, and Swanzy are silent upon the subject, yet, as Dr. Steindorff observes, Hippocrates long ago drew special attention to the influence of temperature and of season on the number of cases and the variety of affections of the eye, whilst support is given to his statements by recent bacteriological researches which show that certain ophthalmic affections are attributable to micro-organisms and that the conditions most favourable for the growth and development of these bodies are coincident with the outbreak of the several diseases which they are believed to occasion. Dr. Steindorff, working in Professor Hirschberg's clinic at Berlin, has had the opportunity of studying that distinguished ophthalmic surgeon's case-books and finds that between May 1st, 1885, and April 30th, 1902—that is, during 17 years—there have been under treatment 7101 patients amongst whom there were 83 patients with acute primary glaucoma, the number of eyes affected being 102. The disease occurred more frequently in women than in men, the proportion being 64 to 19, or 77·1 per cent. By far the most frequent age was the period between 50 and 70 years. Some, perhaps ten, of the 102 cases should properly be excluded because the attack was directly induced by the use of mydriatics in an eye already predisposed to the disease or resulted from operation on the opposite eye. Of the 92 remaining cases 68 were utilisable as showing the effects of meteorological influences, since they occurred in Berlin where the weather reports of the period were accessible. On examining the dates of the attacks of the entire number of 102 cases it was found that 65 cases occurred during the cold period of the year—that is, from October to March—whilst there were only 37 cases from April to September. Of the cases that presented themselves in summer the larger number occurred on the hottest days. Dr. Steindorff calls attention to the well-known influence of cold on blood pressure and therefore on the intra-ocular tension, an influence that is particularly well-marked in those suffering from the arteriosclerosis which is frequently associated with glaucoma. Very high temperatures, on the other hand, have a tendency to lower the force of the heart and to lead in this way to venous stasis. No relation was observed between the attacks of glaucoma and the humidity of the air, the force or direction of the wind, or to storms.

LEUCOCYTOSIS DURING DIGESTION.

IT has long been admitted that during the process of digestion an increase takes place in the number of leucocytes to be found in the blood, but the period of digestion when this increase occurs, the extent and duration of the increase, and the characters of the leucocytes, as well as their source or sources, have not been satisfactorily ascertained. Nor has the effect of the presence or absence of the spleen been determined. The inquiry is a difficult one but it has been attacked by three physiologists working in concert and the results of their experiments have been published in a recent number of the *Journal of Physiology* (vol. xxx., No. 1). The enumeration of the leucocytes was undertaken by Dr. Alexander Goodall, the differential counts were made by Dr. G. Lovell Gulland, whilst to Dr. D. Noel Paton was intrusted the operative part of the proceedings, as the withdrawal of the blood, the removal of the spleen, and the determination of the hæmoglobin. Eight experiments were made, seven being upon dogs and one upon a cat. In each case the animal was kept fasting for a day; a little blood was then withdrawn and the number of leucocytes in a definite quantity was determined by means of the Thoma-Zeiss leucocytometer, whilst simultaneously the amount of hæmoglobin was determined with Oliver's hæmoglobinometer in order that any error arising from differences in concentration of the blood might be excluded. The animal was then fed on as much minced beef and water as it would eat. The experiments showed that there was a tolerably regular rise in the total numbers of leucocytes in the circulation and that this increase reached its maximum about four hours after the ingestion of food. The increase is due partly to a lymphocytosis which is very constant as regards its incidence and degree and partly, in the greater number of cases, to a much more variable polymorphonuclear leucocytosis. Leucocytosis during digestion is not affected by removal of the spleen. The organs to which these experimenters attribute the increased numbers of the leucocytes during and after digestion will constitute the subject of another communication.

THE winter course of lectures and demonstrations in connexion with the Mount Vernon Hospital for Consumption and Diseases of the Chest was opened on Oct. 15th by Professor Thomas Oliver of Newcastle-on-Tyne with an address on Occupation as a Cause of Lung Disease. The lectures are free to qualified practitioners and students of medicine and are given in the lecture hall of the out-patient department at 7, Fitzroy-square, London, W., on Thursday afternoons at 5 o'clock. A full list of the forthcoming lectures will be found in our advertisement columns.

A SPECIAL meeting of the council of the Charity Organisation Society will be held on Monday, Oct. 26th, at 4.30 P.M., at the Royal United Service Institution, Whitehall, London, S.W., when Dr. Edmund Cautley will read a paper on Out-patient Departments and the Rearing of Children. Sir W. J. Sendall, G.C.M.G., will take the chair. Communications should be addressed to the secretary of the society, 15, Buckingham-street, Strand, W.C.

ONLY 1 case of plague was discovered in the Cape Colony during the week ending Sept. 26th—namely, at Port

Elizabeth. Plague-infected rats were found in the dock at East London. In the Mauritius for the week ending Oct. 15th there were 88 cases of plague and 54 deaths from the disease.

H.R.H. the Princess of Wales has graciously consented to become patron of the British Lying-in Hospital (founded in 1749), the oldest hospital of its kind in London.

WE regret to announce the death of Dr. James Robert Wallace, editor of the *Indian Medical Record*, which took place in India on Sept. 27th.

DINNER OF THE ROYAL ARMY MEDICAL CORPS.

SPEECH BY MR. BRODRICK.

Surgeon-General Sir William Taylor, K.C.B., Director-General of the Army Medical Department, presided at a dinner given on Oct. 21st at the Whitehall Rooms, Hôtel Métropole, London, by the Royal Army Medical Corps, the guests being the Right Hon. St. John Brodrick, the Secretary of State for India.

Sir WILLIAM TAYLOR, after proposing the usual loyal toasts, spoke to the toast of "The Guests." He said that Mr. Brodrick's Reorganisation Committee had introduced many improvements into the medical service of late. Amongst these was the issue of a new Warrant and among the benefits resulting therefrom was increased pay, not only for those serving in the United Kingdom but also for those serving in India and the colonies. By the new Warrant charge pay was also given; that had been asked for times without number but had always been refused until insisted upon by Mr. Brodrick's committee. There was, further, an increase under the new Warrant of examinations, and when he reminded them that passing these examinations brought with it increase of pay and accelerated promotion he thought no one would deny that that also was of benefit. He drew attention particularly to the appointment of sanitary officers to insure healthy quarters and camps. Another result was the removal of the Royal Army Medical Corps school from Netley to London. They were indebted to Mr. Brodrick for the sum of £100,000 voted for the new building. A large increase had been made to the nursing establishment of the corps, resulting in great improvement in the condition of the wards and of increased comfort to the patients. One of the most useful courses in their college in London was that on army organisation and he asked if it was not possible to make these lectures more widely useful and to devise some method of registration by which the services of civilian medical men trained for war could be secured.

Mr. BRODRICK, in replying, commented on the great reductions in the Army Medical Department which were carried out in 1886 and which they had ever since had good reason to regret. This reduction occurred at a time when the civilian members of the profession were making rapid advances in scientific knowledge. He then proceeded to show its result by quoting the number of entrants for the examinations to the Royal Army Medical Corps and the number of vacancies for a few years back. In 1897 the candidates numbered 28 and the vacancies 35; in 1898 there were 21 candidates and 40 vacancies; in 1899 there were 25 candidates and 28 vacancies; and in 1900 there were 16 candidates and 50 vacancies. In 1902, after the reorganisation of the Royal Army Medical Corps, there were 73 candidates for 30 vacancies; in February last there were 50 candidates for 30 vacancies and 78 candidates for 30 vacancies in July last. Mr. Brodrick said that it needed no word from him to point the moral conveyed by these figures. During the late war some people had been surprised that the Royal Army Medical Corps had not expanded to meet the great emergency of that time. But, he said, if on the occasion of the banquet at which they were present instead of inviting 100 guests they had only asked 30 and had called on the cook late in the afternoon to provide for 100 they would not have found fault with the cook but with the man who ordered the dinner if matters had not turned out satisfactorily. Until lately the Royal Army Medical Corps had not been able to keep pace with the advances in medicine because there were no examinations for special promotion and even high positions were filled by men who were chosen in order of seniority and without any selection for merit. There was no study leave granted for scientific research and owing to the shortage in officers the amount of foreign service was excessive. Without the coöperation of the civilian heads of the profession and without the free acceptance by the Army Medical Department of the help offered to it the great development and changes in the Royal Army Medical Corps could not have taken place. He considered that the substructure on which any Minister would in future have to work if he wanted to make progress in army matters would be the hearty coöperation of those who had given the orders with those who had to carry them out. Mr. Brodrick then described the friction that he found at the War Office 17 years ago between the civilians and the military men and contrasted that condition of things with those prevailing at the present time when the greatest cordiality prevailed. He failed to find on looking through the pages of the report of the Royal Commission any complaint that the civilian element had broken down. He particularly emphasised the point that the Royal Army Medical Corps had been brought into close touch with the outside world of science and he hoped that the new college of the corps would be rising from the ground within a few months. The money had been voted and the necessary plans had been prepared.

Sir WILLIAM S. CHURCH, Bart., K.C.B., who also replied to the toast, said that the Royal Army Medical Corps had been enabled to meet the unprecedented demands made on it in the late war in a way that surprised him and his brother commissioners because it had a vast amount of trained material on which to draw, though there was a lack of knowledge of military organisation.

Sir LAMBERT H. ORMSBY, President of the Royal College of Surgeons in Ireland, and Sir WILLIAM TURNER, K.C.B., President of the General Medical Council, having also responded, Sir FREDERICK TREVES, Bart., K.C.V.O., proposed the toast of "The Royal Army Medical Corps," which was acknowledged by Sir WILLIAM TAYLOR, and this concluded the evening's proceedings.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on Oct. 15th, Mr. JOHN TWEEDY, the President, being in the chair.

The Secretary reported the death on Sept. 6th, at the age of 66 years, of Mr. Thomas Richard Jessop, member of the Council, and he stated that the President had attended the funeral at Leeds as the representative of the College.

The following motion was passed:—

The Council do hereby record their deep regret at the death of Mr. Thomas Richard Jessop whom they highly esteemed as an upright and able colleague, keenly interested in the welfare of the College and the advancement of the science of surgery. The Council also desire to express their sincere sympathy with Mrs. Jessop and the members of the family in the loss which they have sustained.

The Secretary also reported the death on Oct. 12th of Mr. George Lawson, past member of the Council, and a vote of condolence was passed.

A letter was read from Mr. T. Pickering Pick resigning his seat on the Council. The Council accepted the resignation with regret and expressed its feeling of appreciation of the many services rendered to the College by Mr. Pick during his tenure of office as member of Council and of the Court of Examiners.

The PRESIDENT stated that the vacancies on the Council so occasioned would be filled up at the July meeting of the Fellows.

A report was read from the Museum Committee reporting the completion of the redecoration of rooms 2 and 3 of the museum.

Mr. J. Langton was re-elected a member of the Committee of Management.

Mr. Rickman J. Godlee was elected a member of the Laboratories Committee in the vacancy occasioned by the retirement in rotation of Mr. Henry Morris.

The draft copy of the annual report of the Council was approved.

The following motion was adopted :—

"The attention of the Council having been called to the fact that medical certificates are not infrequently made use of by soldiers to assist them in deserting and otherwise evading military discipline the Council desire to call the attention of Fellows and Members to the abuse to which such certificates may be put and to the responsibility which is attached to their issue.

This motion was adopted by the Council in consequence of the following report received from the Discipline Committee, viz. :—

The committee desire to report to the Council that they have had under consideration a communication from an officer in command of a battery of Royal Field Artillery at Aldershot stating that "It is a notorious fact amongst soldiers that a certain class of practitioner will grant a medical certificate to enable a soldier to remain absent on insufficient grounds," that several instances have recently come under his notice, and that in two cases the certificate has assisted the soldier to desert and to conceal his desertion for several days. The officer in question also submits full particulars of one case, from which it would appear that a driver in his battery obtained a certificate of this nature upon insufficient grounds. Without questioning the *bona fides* of the practitioner who granted the certificate in the particular instance to which their attention has been called, the committee, in view of the alleged frequency of such cases, would suggest to the Council the desirability of calling attention to the abuses to which medical certificates may be put.

A letter was read from the President of the General Medical Council stating that he had been authorised to appoint a committee of members of the General Medical Council to confer with representatives of the Royal College of Physicians of London and the Royal College of Surgeons of England in regard to the questions which have been raised respecting the regulations for the first year of study and the first examination of the Conjoint Examining Board and asking to be informed if the College desires such a conference and will appoint representatives.

It was resolved to inform the President of the General Medical Council that his letter had been under prolonged discussion and that a committee had been appointed to confer with representatives of the Royal College of Physicians of London on the subject of the proposed conference.

A letter was read from Mr. Reginald Harrison offering to present to the Council a collection of photographs of the Honorary Fellows of the College. The offer was accepted and the best thanks of the Council were voted to Mr. Harrison for his interesting gift.

Mr. Dent was appointed a member of the Finance Committee and Mr. A. W. Mayo Robson was appointed a member of the Discipline Committee in the vacancies occasioned by the death of Mr. Jessop.

The Council passed the following motion as a reply to a request from the solicitors of the Worshipful Company of Spectacle Makers for the views of the Council on a proposed inclusion of sight-testing in the examination for the diploma of the company :—

The Council of the Royal College of Surgeons have carefully considered the matters upon which they have been invited by the Worshipful Company of Spectacle Makers to express their opinion and desire to submit the following statement of their views for the information of the committee appointed to consider the proposed alteration in the character of the company's diploma :—

Considering the hidden danger and the untoward possibilities that may attend almost any morbid state of the body it is against public safety and welfare that anyone should be deemed competent to order or prescribe any medical or surgical remedy or appliance who has not had an efficient medical and surgical training. More particularly with respect to the petition of working opticians that they should be certified, after due examination, to be qualified to test the sight and prescribe spectacles to correct the various errors of refraction, it is to be observed that, while optical defects often occur in eyes which are otherwise healthy, they are not infrequently associated with diseased conditions which are difficult to detect and whose nature and significance can only be appreciated by persons who have studied diseases of the eye not merely as local affections but in their relation to general disease. Moreover, in many grave affections of the eyes, whether of a local or of a constitutional character, such as inflammation or atrophy of the optic nerves, inflammation or degeneration of the retina or choroid, chronic glaucoma and many other diseases, the earliest and most obtrusive symptom is often impairment of sight, which patients themselves are too prone to ascribe to presbyopia or other optical defects remediable by spectacles. This opinion, the optician, by virtue of his calling, is naturally predisposed to adopt and enforce. In the ultimate interest of the public no countenance should be given to any proposal which is likely to foster the belief that tradesmen, whatever be their technical skill, and whether opticians or orthopædic or other surgical instrument makers, are safe and sufficient guides in the management and treatment of deformities or other diseased conditions.

Obituary.

GEORGE LAWSON, F.R.C.S. ENG.,

CONSULTING SURGEON, ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS, AND THE MIDDLESEX HOSPITAL; AND SURGEON OCULIST TO HER LATE MAJESTY QUEEN VICTORIA.

Mr. George Lawson, whose death on Oct. 12th in his seventy-third year we recorded in our last issue, was a man who endeared himself to all who knew him—to his patients, to his colleagues, to his pupils, to his nurses, and also to the porters and the servants of the institutions with which he was connected. His peculiar freshness and charm of manner, his evident sincerity, and complete unselfishness impressed themselves on all who came in contact with him. He was born on August 23rd, 1831, being the second son of William Lawson of the firm of Trower, Trower, and Lawson of the City of London. He received his general education at Blackheath and King's College and his professional training at King's College Hospital. He there came under the influence of Sir William Fergusson who was at that time attracting so much attention by his brilliant operative dexterity. Mr. Lawson became his house surgeon and in a surgical sense may be considered as one of his descendants, whilst in ophthalmology he followed in the footsteps of Sir William Bowman who during Lawson's student career was an assistant surgeon at King's College Hospital.

Mr. Lawson qualified as a Member of the Royal College of Surgeons of England when 21 years of age and the following year obtained the diplomas of Licentiate of Midwifery and Licentiate of the Society of Apothecaries. Early in 1854, war threatening to break out between England and Russia, Mr. Lawson, full of surgical ardour, entered the army as an assistant surgeon and was gazetted on the army medical staff. In March of that year he left England with the first batch of troops for Malta and was there when war was declared. He then accompanied the troops to Gallipoli and afterwards to Varna where he was attached to the third division under General Sir Richard England to attend the staff and those connected with them. From Varna he went to the Crimea and landed with the troops at Old Fort, being exposed to the drenching rain which rendered famous the first night of the Crimean campaign. He marched with the army and saw the first shot fired at the Bulganak. He was at the battle of the Alma, in the flank march which followed some days afterwards, and with the rearguard at Mackenzie's farm. He was also with the third division in front of Sebastopol and on Nov. 5th at the battle of Inkerman was detached to do duty with the fourth (Sir George Cathcart's) division. About the middle of January, 1855, Mr. Lawson was sent to Balaclava as assistant to Dr. Arthur Anderson to attend to the sick officers on board ship and the sick of the staff and commissariat. Towards the end of May, 1855, he caught typhus fever from some mule drivers whom he was attending; in July he was invalided to England and sent home in charge of one of Miss Nightingale's nurses. During 1855 he had been gazetted assistant surgeon to the 3rd Battalion Rifle Brigade. After an illness of five months, the Crimean war having ended, he retired from the army. Throughout the rest of his life he always took the greatest interest in the service and kept a warm place in his heart for any soldier who came under his care. He would often take great trouble in helping those who were injured or disabled to acquire an adequate pension or compensation. Mr. Lawson never completely recovered from the effects of the fever—his circulation remained permanently impaired. His pulse-rate was always remarkably slow and his hands were cold and livid. Those who have followed him round the hospital will recall the frequent pauses that he made in ascending any stairs, pauses always enlivened by charming conversation on the wide and diverse subjects in which he was interested.

On giving up the army Mr. Lawson decided to practise in London; he passed his examination for the Fellowship of the Royal College of Surgeons of England in 1857, settled at first at 63, Park-street, Grosvenor-square, and as the outcome of his experience at the Crimea wrote a pamphlet "On Gunshot Wounds of the Thorax" which appeared in 1858. From about this time he began to turn his attention specially to ophthalmic medicine and surgery, influenced probably by Bowman whose clinical assistant he became at the Royal

GEORGE LAWSON, F.R.C.S.

London Ophthalmic Hospital, Moorfields. In 1861 appeared the first of a long series of communications which he contributed to that hospital's Reports; it was the description of a case of congenital absence of the iris. For a short time he held the post of surgeon to the Great Northern Central Hospital. In 1862, on the retirement of Mr. Poland, he was appointed assistant surgeon to Moorfields Hospital and the following year assistant surgeon to the Middlesex Hospital. At each of these two latter institutions he continued to work until he became the senior surgeon and reached the retiring age.

During the first years of his connexion with Moorfields Hospital he devoted particular attention to injuries of the eye and sympathetic ophthalmitis. Several papers were written by him on these subjects in the Ophthalmic Hospital Reports and a pamphlet on the latter was published in 1865. The importance of removing injured eyes or atrophied blind eyes, which were at all likely to endanger the safety of the other eye, was a topic upon which Mr. Lawson was particularly fond of dilating. In 1867 he published his collected experiences on these matters in a book entitled "Injuries of the Eye Orbit, and Eyelids." Two years later appeared the first edition of his "Manual on Diseases and Injuries of the Eye," by which he became widely known outside his own school. It was a book which certainly "hit the moment" and ran rapidly through several editions. It supplied in a most readable form a thoroughly practical work on a special subject suitable for a student. Up to that time no work covering quite this ground had appeared in English, though several books on similar lines have since been written. This year a sixth edition of this work, edited, enlarged, and largely rewritten by Mr. Arnold Lawson, has been brought out. We know that the production of it by his son afforded Mr. George Lawson much zest and interest during his declining years. We are glad to see that in it has been retained much of the practical shrewd common sense which rendered Mr. George Lawson's treatment of patients so eminently successful. He did not stop in his treatment at simply prescribing drugs or lotions. He would instruct a mother how to feed, to clothe, and to train her child, often entering into much detail as to the preparation of the food. He would tell a patient in whom nothing could be done to restore sight what he could still do and how to get to work to earn a livelihood. Many of those who see out-patients have doubtless wished that they could prescribe for some of them food instead of medicine. Mr. Lawson actually did this, having an arrangement with a neighbouring butcher by which he could order patients so many pounds of meat. Nor did Mr. Lawson's generosity to out-patients end with supplying sound advice and meat; many a patient to whom some more than usually disastrous circumstance had occurred would be led quietly aside and return with a smiling face and a closed palm.

In his after-treatment of operation cases Mr. Lawson was full of little devices calculated to further the convenience or welfare of his patients. The twisted wire sides for spectacles, which add so much to the comfort of those who have to wear them constantly, were originally suggested by him. He had a rapid and almost intuitive way of arriving at a diagnosis which was somewhat startling to those who failed to appreciate the large amount of experience of which it was the outcome. As a general surgeon Mr. Lawson was a judicious, bold, and cool operator, ever ready to meet any emergency that might arise. He reached his zenith before the recent advances in abdominal operations had been effected and during the latter part of his career he preferred to transfer cases requiring such treatment to younger hands. An operation at which he was particularly successful and dexterous was the removal of the upper jaw and as became a pupil of Fergusson he was a skilful lithotomist. He had an exceedingly steady hand which was of special service to him in the delicate operations on the eye. He was an ardent advocate for the use of a Graefe's knife instead of a keratome in cases of glaucoma and preferred curette evacuation to suction for the removal of soft cataracts. It may be noted that Mr. Lawson was in the habit of saying that cataract operations caused him infinitely more anxiety than any general operative procedure. In diseases of the orbit he took a keen interest and his last contribution to ophthalmic literature was a paper on plastic cellulitis affecting that cavity, which he read at the Ophthalmological Society in December, 1894. He was a lecturer on surgery at the Middlesex Hospital. His teaching may be described as more picturesque than systematic. About matters which he felt strongly he was most emphatic and would illustrate them with a wealth of practical observations which could not fail to interest and to instruct.

Mr. Lawson was a difficult man to get the better of in an argument; when you thought you had got him completely in a corner he would in a most innocent manner by some happily expressed phrase or anecdote turn the conversation into an entirely fresh channel. For a time he was an examiner in surgery for the Royal College of Physicians of London but it was a form of employment in which he took but little delight. He was elected a member of the council of the Royal College of Surgeons of England in 1884 and in 1886, at the suggestion of Sir William Jenner, was appointed surgeon oculist to Her late Majesty Queen Victoria, which appointment he held until her death. Mr. Lawson took considerable interest in the improvement of his wards at the Middlesex Hospital and through the generosity of private friends and old patients he was enabled to effect many alterations in their furniture and structural arrangements which proved so advantageous that they were subsequently adopted throughout the hospital. During the later years of his connexion with the Middlesex Hospital he was largely instrumental in the establishment of the chapel. Always a strong Churchman, the superintendence of its erection and beautification afforded him the greatest gratification. No more fitting place than this chapel could have been chosen for a memorial service at which his old friends and colleagues assembled to take part on Oct. 16th.

Mr. Lawson was a man of very simple tastes, the state of his health incapacitating him from taking any active exercise. He was a great reader and exceedingly fond of animals. He would never allow his horses to be whipped and had a dog as a constant companion. Regularly twice a year, at Easter and in the summer, he would go, together with his wife and large family of boys, to his delightfully situated little house "The Hut" at the head of Saint's Bay in Guernsey, there to recuperate from the fatigues of his very extensive private practice and hospital work. On his retirement from the Middlesex Hospital his old assistants and pupils, to whom he was always a staunch friend, wished to honour him by entertaining him at dinner, but Mr. Lawson, always a modest man and disliking any display or public functions, most definitely declined. The later years of his life were saddened by the death of two of his sons, both of whom had passed through most distinguished careers at the Middlesex Hospital. He saw patients up to within 18 months of his death which occurred at his residence, 12, Harley street, Cavendish-square, on the afternoon of Monday, Oct. 12th, after a long illness.

His wife and five sons survive him; of these latter two are in the medical profession: one, Mr. Arnold Lawson, like his father, is practising as an ophthalmic surgeon and the other is a captain in the Royal Army Medical Corps. By the death of Mr. George Lawson the profession not only loses a most distinguished surgeon but a most generous large-hearted man who was the true type of a Christian gentleman. The funeral took place at Hildenborough on Oct. 16th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ernst Pflüger, professor of ophthalmology in the University of Berne. He was a pupil of Donders in Utrecht and of von Arlt in Vienna.—Dr. Domenico Tibone who has been for 38 years professor of midwifery and gynæcology in the University of Turin.—Dr. Ricardo Secondi, professor of ophthalmology in the medical school of Genoa.—Dr. Tschaussow, professor of anatomy in the University of Warsaw, at the age of 54 years.

MEDICINE AND THE LAW.

A Case of Selfish Recklessness.

ON Oct. 15th at the South-Western police-court a working-man in the service of the Battersea borough council was summoned for exposing himself while suffering from small-pox. He had been to a public-house and to the home of a friend while well aware of the fact that it was wrong for him to do so, for he had actually written at that time to someone saying that he was expecting to be removed to an isolation hospital. He was fined 40*s.* and costs, in addition

to which he had been deprived of his wages by his employers during his illness in consequence of his conduct. It was stated on behalf of the Battersea borough council that men employed by the council and suspected of sickening with small-pox were, as a rule, treated by its medical staff and isolated without undergoing any loss of pay, so that there was no excuse for the defendant's recklessness.

A Question of Liability.

The Lord Mayor, sitting at the Mansion House, was informed recently of an objection raised by the City board of guardians to defray the cost of treatment in its infirmary of persons arrested on the Tower Bridge. The man in whose case the matter was mentioned had tried to commit suicide from the bridge and was rightly arrested by the City police in whose jurisdiction it is. The bridge, moreover, was erected by the corporation. It is, however, apparently contended by the clerk to the City guardians that for administrative purposes the Tower Bridge is in Whitechapel and that the person in question should have been handed over to the care of the Whitechapel guardians. The Lord Mayor seems to have felt no doubt that this contention was wrong but the question was not before him for decision. It was not suggested that the man, who was ill and in a very weak state, had in any way suffered from the difficulty which had arisen and the point will no doubt be finally settled before another similar case arises.

Horses and the Sausage Trade.

A man was awarded a month's imprisonment recently at the Thames police-court who was found leading a lame and diseased horse to Barking, presumably with a view to shipment to the continent. The magistrate, in sentencing him for the cruelty inflicted upon the animal, spoke of the trade for the benefit of which the poor brute was to be exported as the "organised sausage trade." The evidence of a veterinary surgeon was to the effect that the horse was so diseased that its flesh must be totally unfit for human consumption. Our foreign neighbours are not to be congratulated upon the articles of food manufactured from such animals, a proportion of which are, no doubt, imported to England.

THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.

A MEETING of the council of this association was held at 13, Hanover-square, W., on Oct. 12th, Sir WILLIAM H BROADBENT being in the chair. It was resolved that a committee to make arrangements for the forthcoming congress in Paris in 1904 should be appointed on which all the members of the council and a number of other gentlemen would be asked to serve. A letter from the Incorporated Society of Medical Officers of Health was read, also a memorial to the Principal Secretary of State for the Home Department with reference to the proposed standards of ventilation contained in the first departmental report on the ventilation of factories and workshops presented to both Houses of Parliament in 1902. The memorial expressed the hope that in the interests of public health a standard of ventilation for factories and workshops would be prescribed under Section 7 of the Factory and Workshop Act, 1901, which should not be lower than that now in force in humidified factories—viz., nine volumes of carbonic acid in 10,000 of air, or, preferably, five volumes of carbonic acid in excess of that found in the outside air at one and the same time. Further, that the standard adopted would not be lowered for gas- or oil-lighted factories and workshops in the way suggested in the first recommendation of the committee, such a lowering being entirely unnecessary in view of the fact that efficient means were at present known by which the products of combustion from gas or oil could be easily and readily removed by ventilating outlet tubes placed over gas-jets or oil-burners and communicating directly with the outside air. Indeed, the legislation of a standard as low as that suggested—viz., 20 volumes of carbonic acid in 10,000 of air in gas- or oil-lighted factories or workshops—would practically render all attempts at securing efficient ventilation nugatory. The council entirely endorsed this memorial and as it already has approached the Home Secretary on the subject it expressed its willingness to co-operate further with the Incorporated Society of Medical Officers of Health in any way that might be thought practicable. The council resolved, in view of the by-law against spitting recently passed by the London County Council, to take further steps to induce the railway companies to prohibit spitting in their carriages and about their premises.

Looking Back.

FROM

THE LANCET, *SATURDAY*, OCT. 22, 1825.

LECTURES

ON THE THEORY AND PRACTICE OF PHYSIC,

BY DR. CLUTTERBUCK.

Theatre, General Dispensary, Aldersgate-street.

LECTURE I.[1]

CHEMISTRY will make a part of this Course, (the materia medica,) because it is chiefly of importance in its relation to pharmacy. Chemistry, notwithstanding the vast advances it has made of late years, and the important applications that have been made of it in other arts, has still but a remote relation to medical science. It is of no service to us in regard to physiology; it does not offer an explanation, that is altogether satisfactory, of any one of the functions of the animal œconomy. Decompositions and new combinations are, no doubt, continually going forward in the living body, but they have little or no analogy, that we can trace, with the ordinary processes of chemistry. We cannot form, artificially, the simplest of the animal fluids; nor can we account, in the least, for those wonderful changes which the fluids undergo, by being subjected to the action of the secretory organs. We see the same blood carried to the liver and to the kidneys, and we find separated from it, by the action of these organs, in the one case bile, in the other urine; but neither bile nor urine are to be found in the common mass of blood, nor can we extract them from it by any art of chemistry.

Nor is chemistry of more avail in explaining the changes that take place in the body in disease. We find the condition of the fluids subject to considerable alterations under disease, but the way in which these alterations are brought about we are totally ignorant of, and equally so of the direct means of remedying them. It will enable us to destroy a prevailing acidity of the primæ viæ, and to account, indeed, for its production upon the common principles of fermentation, but it has nothing to do with that derangement of action in the organs which allows the fermentation to go on, and upon which the continuance of the disease depends. Even in calculous disorders, as the stone in the bladder, where chemistry seems to promise so much, it has, in a great measure, failed us, and we are still frequently under the necessity of resorting to a dangerous and painful operation for relief. We have, indeed, solvents which readily act upon the stone out of the body so as to dissolve it, but they are capable at the same time, of destroying the texture of the body itself, which, in a great measure, precludes their employment.

For a long time diseases were looked upon in no other light than as chemical phenomena, and the cure of them undertaken upon corresponding principles; but the fallacy of this we are now well aware of; chemistry does not adequately explain the production of the simplest of our diseases, and consequently does not suggest any certain means of relief.

[1] An excerpt only is transcribed.

VACCINATION GRANT.—Mr. A. G. Bateman Lory, medical officer and public vaccinator of the Chudleigh district of the Newton Abbot union, has for the second time received the grant for successful vaccination from the Local Government Board.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Portsmouth Urban District.—Dr. A. Mearns Fraser embodies in his annual report the very lucid account which he presented to the Portsmouth town council in December last upon the prevalence of oyster-borne enteric fever in Portsmouth. This outbreak, which occurred about the same time as did the remarkable outbursts of enteric fever and other illness which followed the mayoral banquets at Winchester and Southampton, was traced to oysters procured from Emsworth, and Dr. Fraser calls attention to the fact that although the dangerous position of the Emsworth ponds was pointed out in 1896 practically no steps had since been taken to mitigate the danger. It is sincerely to be hoped, as Dr. Fraser urges, that steps will soon be taken to close not only these ponds but also all those which are obviously liable to pollution. Moreover, it is necessary that restrictive measures, albeit they are more difficult to apply than in the case of oysters, should be extended to other shell-fish such as mussels and cockles. With regard to the excessive prevalence of diarrhœa in the neighbourhood of Goldsmith-avenue Dr. Fraser makes a strong report. Although generally speaking the incidence of diarrhœa upon the town as a whole was slight as compared with certain other years there were in a circumscribed population of 817 no fewer than 102 cases (with 19 deaths) of epidemic diarrhœa. This terrible incidence is attributed by Dr. Fraser—and, indeed, by practically all the medical men who attended the cases—to the plague of flies which were attracted to the neighbourhood by the refuse collected near the brick-burning works in the vicinity. It appears that these flies are so numerous that all food has to be kept covered at meal times and that even in spite of this precaution the flies succeed in settling on the food on its way from the plate to the mouth. Dr. Fraser tells us that he found walls, pictures, and furniture covered with fly marks and that the parents were unable to prevent flies crawling into the mouth and eyes of children as they were dying. The recent experiments of Firth and Horrocks have shown conclusively that both the legs and the wings of flies which have walked over media infected with disease germs may act as carriers of infection. Dr. Fraser has for several years urged upon the town council of Portsmouth the necessity for the erection of a refuse destructor and it seems difficult to understand how any sanitary authority, more particularly one of the importance of Portsmouth, should have so long delayed this provision in face of the numerous lives which have been yearly sacrificed by reason of the existing method of dealing with and utilising refuse. Dr. Fraser's scheme for the erection of a sanatorium for the county of Hampshire has not so far been successful but now that it is possible for county councils to declare pulmonary tuberculosis a notifiable disease for isolation purposes alone, and such declaration will not subject consumptive patients to all the disabilities imposed upon persons suffering from acute infectious diseases, Dr. Fraser will perhaps feel disposed to make a fresh attempt.

Metropolitan Borough of Hackney.—Dr. J. King Warry strongly deprecates the practice which largely obtains of treating cases of enteric fever at their own homes. He thinks that all cases should be isolated in hospital unless the circumstances are such as to allow of adequate accommodation and the attendance of a trained nurse. In his experience secondary cases very frequently follow when the patients are nursed at home by their untrained relatives. Dr. Warry finds that the patients frequently remain at home on the advice of their medical attendants. There can, we imagine, be no question that where proper isolation accommodation and trained nursing cannot be procured the patient's chances of recovery are better at a well-administered hospital. Attention is drawn by Dr. Warry to a custom which is not, we think, generally known. It is, he says, the custom of undertakers in Hackney (and inferentially elsewhere) to receive dead bodies on their premises and to keep them there until the date of the funeral. The arrangements for such storage at these improvised mortuaries are far from satisfactory and in one instance a body was even found to have been kept in the front shop adjoining the street, while in another the bodies of infants were stored in a cellar beneath the house. The abuse which a practice such as this might lead to may be gathered from the fact that in two cases the undertakers who were in possession of the bodies refused to bury them until they had been paid the cost of the funeral. The extent of the practice referred to in Hackney may be inferred from the figures of the last census, from which it appears that there are in this borough no fewer than 4827 tenements of one room only and a total of 29,087 tenements of four rooms and under. Dr. Warry thinks that even in the majority of the three- and four-room tenements the dead body is as a rule taken charge of by the undertaker, seeing that during 1902 there were only eight bodies taken to the mortuary to await burial. Attention is also called by Dr. Warry to the dangers which attend the disposal of stillbirths. It is, he alleges, the custom for the undertakers to receive these bodies and to take charge of them until a convenient opportunity offers for their interment. This practice affords, he thinks, a favourable opportunity for the exercise of foul play, inasmuch as if the body be called a stillbirth no further inquiries are made. In Dr. Warry's opinion the law should be so altered as to provide that all dead bodies which cannot be kept at home should be removed to the mortuary and that all fœtuses which have reached the age of development of seven months should be registered upon the certificate of a medical practitioner.

Blackpool Borough.—Dr. F. J. H. Coutts, in the course of an interesting and carefully prepared annual report, refers to the danger which exists at Blackpool owing to the existence of mussels in considerable quantities on the outfall sewer itself and also upon the pier and he furnishes several instances of enteric fever cases in which the evidence suggests that the consumption of shell-fish may have caused the attack. More than this can hardly be asserted in the majority of instances. Special stress is laid by Dr. Coutts upon one case in which a policeman, nine days before the onset of the disease, procured mussels from a man who had been seen to pick them from the sewer outfall pipe. Both the policeman and one of his colleagues ate some of the mussels and on the next day the colleague was attacked by severe vomiting and purging, while the policeman referred to developed later a typical attack of enteric fever. These two cases are much on a par with those which occurred after the Southampton and Winchester mayoral banquets, when several guests suffered not only from vomiting and diarrhœa shortly after the banquet but also, later, from enteric fever. Dr. Coutts suggests as a remedy for the existing state of affairs that some satisfactory method of sewage treatment should be adopted so as to eliminate the danger of the specific infection of shell-fish. But unfortunately there is no known practical method of rendering a sewage effluent sterile *quâ* disease organisms and nothing which can be done is likely to render the safe eating of shell-fish (uncooked) which have been taken from a sewer outfall or its immediate neighbourhood.

Bristol County Borough.—Dr. D. S. Davies is apparently endeavouring to introduce into Bristol that much needed reform, or rather advance, in preventive medicine which consists in the periodical examination of school children, and by way of accentuating this question he furnishes in the current annual report a summary of the practices as regards the inspection of school children which are in vogue in some English and many continental cities. There are now over 60 000 children attending the public schools of Bristol, and the periodical physical examination of these children, more especially if such examinations were followed by the cure or amelioration of defects, would make a very real impression upon the future adult population of Bristol. Obviously, too, such examinations would enormously facilitate the detection of cases of infectious disease and thus would reduce the chances of school outbreaks and the necessity for closing the schools. Bristol, with its population of over 334 000 and its great wealth, might very well set an example to other large towns by initiating a really modern system of the inspection of school children and we hope that next year we may be able to chronicle this advance in the application of preventive medicine in this country. In connexion with the control of diphtheria a somewhat new departure was taken at Bristol during 1902. Those children who had been in contact with undoubted cases of diphtheria and in whose throats Hoffmann's bacillus was detected were treated as out-patients by means of antiseptic washes at the isolation

hospital. After the children have been thus treated for a fortnight the throats are examined to determine if they may safely attend school. The experiment, in so far as the evidence is of value, appears to have been satisfactory. As regards the difficulty of the adequate control of milk Dr. Davies draws attention to the fact that Bristol derives its milk from 154 farms and that of this number 85 are in Gloucestershire, 67 are in Somersetshire, and two are in Wiltshire. It is, however, satisfactory in a sense to learn that only four samples out of 74 examined were found by inoculation to contain the tubercle bacillus. In the matter of the treatment of pulmonary tuberculosis the corporation of Bristol has decided to contribute £1000 towards the cost of erecting the sanatorium which is being constructed at a site near Bath for the counties of Gloucester, Somerset, and Wilts, and the corporation has also, subject to certain conditions, agreed to contribute £260 annually in order that it may have the exclusive use of four beds.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8466 births and 4573 deaths were registered during the week ending Oct. 17th. The annual rate of mortality in these towns, which had been 16·3, 15·3, and 15·8 per 1000 in the three preceding weeks, was again 15·8 per 1000 last week. In London the death-rate was 15·3 per 1000, while it averaged 16·1 in the 75 other large towns. The lowest death-rates in these towns were 3·3 in Hornsey, 7·1 in Barrow-in-Furness, 7·2 in Handsworth, 7·9 in Grimsby, 8·1 in Croydon and in Burton-on-Trent, 8·2 in King's Norton, and 9·0 in Wallasey; the highest rates were 20·2 in West Hartlepool, 20·3 in Manchester, 21·1 in Stockton-on-Tees, 21·5 in Burnley, 21·8 in Tynemouth, 22·3 in Hanley, 24·2 in Salford, and 26·3 in Middlesbrough. The 4573 deaths in these towns last week included 634 which were referred to the principal infectious diseases, against 752, 697, and 707 in the three preceding weeks; of these 634 deaths, 420 resulted from diarrhœa, 49 from "fever" (principally enteric), 45 from measles, 43 from diphtheria, 42 from whooping-cough, and 35 from scarlet fever, but not one from small-pox. No death from any of these diseases was registered last week in Hornsey, Reading, Devonport, Grimsby, Bootle, or Newport (Mon.), while they caused the highest death-rates in West Ham, Northampton, Great Yarmouth, Hanley, Smethwick, Burnley, Preston, Middlesbrough, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Stockport, Warrington, and Sunderland; from scarlet fever in Swansea; from diphtheria in Great Yarmouth; from "fever" in Waltham-tow, Rhondda, and Merthyr Tydfil; and from diarrhœa in West Ham, Northampton, Hanley, Birmingham, Burnley, Preston, Middlesbrough, and Merthyr Tydfil. The mortality from whooping-cough showed no marked excess in any of the large towns and no fatal case of small-pox was registered during the week. The number of small-pox cases under treatment in the Metropolitan Asylums hospitals on Saturday last, Oct. 17th, was 11, against 29, 21, and 17 on the three preceding Saturdays; one new case was admitted last week, against one, one, and two in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1886, 1876, and 1881 at the end of the three preceding weeks, had declined again to 1860 at the end of last week; 206 new cases were admitted during the week, against 293, 235, and 240 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 134, 161, and 146 in the three preceding weeks, rose again to 175 last week, but were 93 below the number in the corresponding period of last year. The causes of 44, or 1·0 per cent., of the deaths in the 76 large towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Bradford, Leeds, and in 49 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Smethwick, Liverpool, Bootle, St. Helens, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·8, 17·3, and 16·0 per 1000 in the three preceding weeks, increased again to 16·1 per 1000 during the week ending Oct. 17th, and showed an excess of 0·3 per 1000 over the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·3 in Aberdeen and 13·5 in Edinburgh, to 17·7 in Glasgow and 20·1 in Perth. The 527 deaths in these towns included 35 which were referred to diarrhœa, 14 to measles, seven to whooping-cough, six to "fever," five to scarlet fever, four to diphtheria, and one to small-pox. In all, 72 deaths resulted from these principal infectious diseases last week, against 77, 65, and 71 in the three preceding weeks. These 72 deaths were equal to an annual rate of 2·2 per 1000, which corresponded with the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 44, 42, and 41 in the three preceding weeks, further declined last week to 35, of which 24 occurred in Glasgow, four in Aberdeen, three in Leith, and two in Dundee. The deaths from measles, which had been five, four, and eight in the three preceding weeks, further rose to 14 last week, and included 11 in Glasgow. The fatal cases of whooping-cough, which had been nine, seven, and six in the three preceding weeks, increased again last week to seven, of which six were registered in Glasgow. The deaths referred to different forms of "fever," which had been seven, six, and nine in the three preceding weeks, declined again to six last week and included two in Dundee. The fatal cases of scarlet fever, which had been two and four in the two preceding weeks, further rose last week to five, of which three occurred in Edinburgh and two in Glasgow. The deaths from diphtheria, which had been four and three in the two preceding weeks, increased again to four last week, and included two in Edinburgh. The fatal case of small-pox occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 84, 88, and 62 in the three preceding weeks, rose again last week to 82, but were 47 below the number in the corresponding period of last year. The causes of 24, or nearly 5 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·7, 18·3, and 19·7 per 1000 in the three preceding weeks, declined again to 18·6 per 1000 during the week ending Oct. 17th. During the past four weeks the death-rate has averaged 19·6 per 1000, the rates during the same period being 14·8 in London and 15·8 in Edinburgh. The 135 deaths of persons belonging to Dublin registered during the week under notice showed a decline of eight from the number in the preceding week and included nine which were referred to the principal infectious diseases, against 16, five, and nine in the three preceding weeks; of these, five resulted from diarrhœa, three from "fever," and one from whooping-cough, but not any from small-pox, measles, scarlet fever, or diphtheria. These nine deaths were equal to an annual rate of 1·2 per 1000, the death-rates last week from the principal infectious diseases being 2·0 in London and 1·1 in Edinburgh. The fatal cases of diarrhœa, which had been 14, three, and four in the three preceding weeks, rose again last week to five. The deaths from "fever," which had been one, two, and one in the three preceding weeks, rose again to three last week. The 135 deaths in Dublin last week included 27 of children under one year of age and 27 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were slightly below the respective numbers recorded in the preceding week. One inquest case was registered, and 56, or more than two-fifths, of the deaths occurred in public institutions. The causes of five, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: E. S. Miller to the *Tartar*; A. G. Eastment to the *Impregnable*; E. S. Tuck to the *Cambrian*, for Ascension Hospital; and J. W. W. Stanton to the *Fire Queen*.

ROYAL NAVAL VOLUNTEER RESERVE.

John Macintyre to be Honorary Staff Surgeon (dated Oct. 15th, 1903). The undermentioned have been appointed Surgeons:—Peter Paterson, Alexander Laurie Brown, James Paton Boyd, and Ebenezer Snell (dated Oct. 15th, 1903).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel A. T. Sloggett, C.M.G., is appointed for duty in the Home District. Captain J. C. B. Statham proceeds to Woolwich for duty. Lieutenant W. F. Tyndale embarks for Bengal and Lieutenant A. B. Smallman for the Punjab early next year. Lieutenant-Colonel W. J. Macnamara is appointed Senior Medical Officer at Jersey. Colonel W. L. Chester takes over the appointment of Administrative Medical Officer, Punjab Command.

ARMY MEDICAL RESERVE OF OFFICERS.

Lieutenant J. T. K. Thomson, Glasgow Companies, Royal Army Medical Corps (Volunteers), to be Surgeon-Lieutenant (dated Oct. 14th, 1903), instead of as notified in the *Gazette* of Oct. 13th, 1903, under "Royal Army Medical Corps."

IMPERIAL YEOMANRY.

East Riding of Yorkshire: Richard Hamilton Ashwin to be Surgeon-Lieutenant (dated Oct. 17th, 1903).

QUEEN ALEXANDRA'S IMPERIAL MILITARY NURSING SERVICE.

Lady Roberts, accompanied by Lady Aileen Roberts and the matron-in-chief, Miss S. J. Browne, R.R.C., visited the Princess Louise Hospital, Alton, recently for the purpose of presenting the badges to the ladies of the nursing staff of the hospital.

Correspondence.

"Audi alteram partem."

THE LUNG REFLEX OF ABRAMS.

To the Editors of THE LANCET.

SIRS,—In his letter on the above subject[1] Dr. A. G. Auld refers to the fact that the lungs can be made to expand—as shown by a diminution in the area of superficial cardiac dulness and a descent of their lower margins—by certain devices—e.g., by briskly rubbing the chest for a minute, by the inhalation of irritating vapours such as ammonia, by plugging the nares with cotton-wool, or finally by vigorous percussion of the epigastrium, and he assumes that the expansion in question is due to a reflex relaxation of the bronchial muscles. May I be permitted to point out that this phenomenon is susceptible of another and simpler explanation. I suggest that all the means referred to tend, independently of any influence on the bronchial muscles, to increase the mean size of the chest and thus to cause pulmonary expansion *by exciting the inspiratory muscles*; thus rubbing the chest, pummelling the epigastrium, and blocking the nares all tend by interfering with normal breathing to induce a certain amount of dyspnœa which, as I have pointed out elsewhere, excites the inspiratory muscles and thus leads to an increase in the mean size of the chest for the purpose of facilitating the circulation, notably that through the lungs; and in regard to the inhalation of ammonia there can, I think, be little doubt that it also tends to promote inspiration rather than expiration, although every now and then a violent expiration may be induced by it in the shape of sneezing.

Dr. Auld does not touch upon the interesting question how bronchial relaxation can cause expansion of the lungs in the living body. Assuming the other intrathoracic organs to remain unaltered in size, it is obvious that the lungs cannot expand without a corresponding increase in thoracic capacity. Now the primary effect of bronchial relaxation must be to cause a relaxation of pulmonary tissue and thus, by diminishing the suction action of the lungs on the thoracic walls and diaphragm, somewhat to increase the size of the chest cavity. The thoracic expansion would not, however, end here. I have in another place sought to show that throughout life the inspiratory muscles are ever busy keeping the lungs at the requisite degree of stretch so as to maintain pulmonary suction at the norm—how, e.g., it is largely in this way that the expansion of the chest in emphysema is to be explained, the inspiratory muscles coming into extra play in order to tune up, so to speak, the relaxed pulmonary fibres to the requisite pitch. The same thing doubtless happens when the bronchial muscles relax and thus tend to cause relaxation of pulmonary tissue. Any enlargement of the chest that may ensue in these circumstances is, I doubt not, chiefly brought about by the inspiratory muscles. It is noteworthy that pronounced constriction of the bronchi (sufficient to cause dyspnœa, as in asthma) also causes enlargement of the thorax; and I believe in a precisely similar manner—i.e., through the agency of the inspiratory muscles, in obedience to the law already referred to that dyspnœa favours thoracic expansion.

I am, Sirs, yours faithfully,

Wimpole-street, W., Oct. 18th, 1903. HARRY CAMPBELL.

[1] THE LANCET, Oct. 17th, 1903, p. 1118.

"IMMEDIATE" AUSCULTATION AND PERCUSSION.

To the Editors of THE LANCET.

SIRS,—I read with great interest the letter on "immediate" auscultation by Sir Isambard Owen in THE LANCET of Oct. 10th, p. 1049. As one who has made use of this method largely and has demonstrated to students its value in certain circumstances again and again I may be permitted to indorse the opinion of Sir Isambard Owen as to the advisability of a "more systematic attention to the practice of direct auscultation than it obtains at present." In my case also it was by accident that I became acquainted with the value of this method. Since then I have met with many medical men who have never employed it and even with some who imagined that without a stethoscope auscultation is not feasible, whereas the fact is that not seldom the immediate is preferable to the mediate method. Very much the same thing applies to percussion. Apart from the fact that the finger is greatly preferable to any other form of pleximeter for regular use, most delicate and accurate work can be accomplished by direct percussion—i.e., by the use of one or two finger tips as a plessor without the intervention of a pleximeter of any kind. In such a case, of course, it is the sense of resistance rather than the "note" which gives the desired information. I remember a most interesting article on this method which appeared in the *Practitioner* some years ago but have forgotten the author's name. To my mind both direct percussion and direct auscultation are deserving of more attention than has been devoted to them by clinical teachers of late years.

I am, Sirs, yours faithfully,

A. E. GRANT, Major, I.M.S.

Eunore, Boscombe, Oct. 11th, 1903.

MATERIA MEDICA AND THE MODERN CURRICULUM.

To the Editors of THE LANCET.

SIRS,—I was privileged to hear the address which Professor Schäfer delivered at the Yorkshire College, Leeds, on Oct. 1st and in the main consider that his very practical suggestions ought to be of great value to the authorities of the forthcoming new university in framing their medical curriculum. I would like, however, to draw attention to his remarks concerning materia medica, and with this I presume is included practical pharmacy. He says, "Materia medica in the strict sense ought not to be part of the curriculum."

Now there seems to be a growing tendency in all our medical schools to minimise the value of these subjects in forming a part of medical education, and hence no wonder that so many men receive diplomas and degrees to practise medicine and surgery who possess the barest possible knowledge of the simplest drugs. I am well aware, of course, that in degree of importance the subjects of physiology, pathology, anatomy, &c., should take priority, but I am confident it would be a retrograde step to remove materia medica from the curriculum.

My point is this, that inasmuch as probably nine-tenths of the general practitioners in this country to-day dispense their own medicines it is only fair to the public and to the profession that they should be properly trained to do so during their curriculum. This seems to me, again, the more necessary

since the old apprenticeship days are gone, for now many men may qualify without much practical acquaintance with the British Pharmacopœia and a very limited theoretical acquaintance also, a circumstance which they always afterwards regret.

It may be argued that materia medica and practical pharmacy are the province of the qualified pharmacist. Granted this to be the case, speaking on the lines of perfection, but we nevertheless have to deal with what *is*, and so long as the great bulk of general practitioners continue to do their own dispensing I submit that the medical schools ought not to relax their teaching in these subjects in the way which is so evident on all sides.

Professor Schäfer goes on to say: "A scientific acquaintance with the action of drugs under both normal and abnormal conditions is quite another story and pharmacology must in future have its due position in the medical curriculum." The student, then, is to know all about the action and uses of drugs without necessarily being acquainted with their physical characters. This savours very much to my mind of mechanical empiricism. I prefer the workman who not only knows how to *use* his tools but knows all about the tools he is using.

In conclusion, let me say that in my opinion this inefficient knowledge of materia medica and pharmacy on the part of many members of our profession is very largely responsible for the reprehensible practice now so prevalent of prescribing and recommending so many proprietary nostrums. If the B.P. is not q.s. along with an addendum, say, such as Martindale's, it *ought* to be, and it becomes a serious reflection on the Pharmacopœia Committee if it be not kept up to date. But this modern practice of prescribing So-and-so's liquid extract and So-and-so's "oids"—very often merely as the result of an interview with an eloquent commercial traveller—is the outcome and the evidence of a most deplorable ignorance which should not prevail.

I am, Sirs, yours faithfully,

Horbury, Wakefield, Oct. 10th, 1903. WALTER ASTEN.

THE VISION OF MYOPES.

To the Editors of THE LANCET.

SIRS,—The fact recorded by Mr. E. Donaldson in his interesting letter in THE LANCET of Oct. 17th, p. 1118, that vision can be improved in a myopic eye by drawing upon the outer canthus with the finger especially appeals to me as being in accord with a theory I propounded some years ago that the external ocular muscles were coördinates that had to be taken into account in considering the so-called static refraction of the eye (vide *Ophthalmic Review*, 1900, p. 211). In that article I mentioned that a myope's sight could usually be improved for the time being by pressing the globe backwards with the finger through the upper lid. I made use of the fact to support some heretical views with regard to polar pressure mechanically making the eye less myopic. Mr. Donaldson's method would have the same effect on the globe and he gives the orthodox explanation that dragging on the outer canthus enables the lid to cut off the diffusion circles, but may it not be that the dragging also causes pressure on the eye, the result of which is that it is somewhat flattened? I do not deny that a diaphragm renders objects clearer by cutting off diffusion circles but in the instance in question I think the fact that dragging the canthus outwards causes diplopia (an observation which can easily be tested) shows that pressure is exerted on the eye.

I am, Sirs, yours faithfully,

Bath, Oct. 18th, 1903. W. M. BEAUMONT.

THE HATCHING OF CHICKENS FROM PRESERVED EGGS.

To the Editors of THE LANCET.

SIRS,—In an annotation on the above subject which appeared in THE LANCET of May 16th, 1903, p. 1393, reference was made to a statement that chickens had been hatched out from eggs which had been preserved for 12 months by immersion in a 10 per cent. solution of sodium silicate. The result indicated seemed so remarkable as to make it worth while to repeat the experiment. Some friends of mine kindly undertook to carry out the following experiment. Twelve eggs were collected in June and immediately placed in a 10 per cent. solution of sodium silicate and completely covered by the solution. On Sept. 5th four eggs were taken from the solution and marked and with nine other newly laid eggs were placed under a hen. All the newly laid eggs hatched out within three weeks but the four preserved eggs did not hatch. One of these eggs was boiled and was quite fresh; the other three were broken and the yelk fell out separately from the white. The whites were whipped up and became quite stiff. This is stated to be the best test of a fresh egg. It is of interest to note that these preserved eggs, even when they had been incubated for three weeks, still remained perfectly fresh, seeming to indicate that the shells were still impermeable to external influences.

Assuming that the remarkable preserving effect of the sodium silicate is due to the formation of an insoluble glass with the lime salts of the substance of the shell it is curious that it has been possible to hatch out a chicken without first making the shell again permeable to air. The experiment is one which should be repeated after the shell has by some method again been rendered permeable, for it seems improbable that the hatching of such preserved eggs can take place if the shell remains impermeable to air.

I am, Sir, yours faithfully,

Oct. 20th, 1903. FREDERICK E. BATTEN.

THE M.D. DEGREE OF BRUSSELS.

To the Editors of THE LANCET.

SIRS,—Dr. P. A. Nightingale states in THE LANCET of Oct. 17th, p. 1119, that the M.D. Brux. confers no right to practise in Belgium and, secondly, that the Belgians take the "State degree" which, in the words of Dr. Nightingale, is "quite another matter." While in Brussels I made inquiries on both these points and was assured that the degree *does* confer the right of practising there after certain legal formalities are gone through and this is evidenced by the fact that two or three Englishmen are now practising there. Moreover, I was given to understand that the examination for foreign candidates is identical in every respect with that of the Belgian students.

I am, Sirs, yours faithfully,

Westcliff-on-Sea, Oct. 18th, 1903. N. LEONARD.

THE MEDICAL REGISTER.

To the Editors of THE LANCET.

SIRS,—I beg to thank you for your courtesy in complying with my request to draw the attention of members of the profession to the importance of accuracy of address. We have had about 300 communications in the past three days and five persons whose names would have been erased at the end of the year under the operation of Section XIV. have saved themselves, so that the result may be considered very satisfactory.

I am, Sirs, yours faithfully,

H. E. ALLEN,
Registrar.

Oxford-street, W., Oct. 14th, 1903.

A BIOLOGICAL THEORY OF THE ORIGIN OF NEOPLASMS.

To the Editors of THE LANCET.

SIRS,—As the study of the origins of neoplasms is commanding a great deal of attention at present, I would like to suggest a natural origin for these tumours. I think rather too much attention has been paid to the heredity of the entire organism and too little to the special hereditary tendencies of the cells themselves which enter into the growth. In the endeavour to obtain an idea of these hereditary properties we must necessarily start at the period when all organisms were in the unicellular state; then study the causes that lead to increased proliferation of cells—first, in the protozoa of unicellular type, and, secondly, in the multicellular organisations where the daughter cells do not separate from the parent except to form the foundation of a new colony. In the unicellular group we find that when the normal cell has not sufficient excess of vitality left to continue reproduction by dividing it resorts to coalescence with another cell and from the stimulation derived there results a great output of daughter cells. In the multicellular organisms of a primitive kind we find that although there is already an attempt made to limit the reproductive functions to certain cells, still that the ordinary tissue cells can take on this function and do.

Remembering the above facts, on looking at that great multicellular organism the human body, we find that certain cells are set apart for the reproductive functions and the

majority of cells are the tissue elements as in the lower organism: should we not expect that at least occasionally by an atavism favoured by certain circumstances the simple tissue should take on the reproductive function, and *by the union of two tissue cells* originate that greatly increased cell proliferation which is a neoplasm. This growth would take on the type of the tissue in which it originated.

And what are the causes likely to favour this reversion of a specialised cell to the habits of its remote ancestors? Any cause which renders the cell less specialised in structure, more motile, or more devitalised when a call is made for exertion to proliferate and repair.

Such a cause is found in long-continued irritation causing frequent destruction of tissue. The ordinary tissue cells are at first quite capable of dividing to repair the gap without resorting to extraordinary means. But when the destruction of the newly laid down tissue is repeated time after time there arrives a period at last when the cells have grown feebler and feebler and give off more and more stunted and primitively developed daughter cells. They require more stimulus and they resort to the only other means in their cellular history of meeting with the demand—viz., two of them unite and then succeeds the tumour. And it is probable that this happens at the same time to several cells which have suffered equally long from the same strain.

I would point out, in conclusion, that by the coalescence of cells of various kinds at the same time, but each two breeding true to kind, we get a good explanation of mixed tumours, and that looking at the history of cells it should be evident to any evolutionist that there must be atavistic reversions of ordinary cells to the reproductive functions which all cells once shared.

I am, Sirs, yours faithfully,
NIEL FLETCHER MACHARDY, M.B., Ch.B. Edin.

Oct. 17th, 1903.

RELAPSES IN SCARLET FEVER.

To the Editors of THE LANCET.

SIRS,—I should be glad if you would allow me through your valuable paper to ask those who are connected with fever hospitals as to whether they have had any cases similar to those which I now describe. 1. Four months ago I admitted to the Brentford Fever Hospital a young girl, nine years of age, with a very severe attack of scarlet fever. She peeled freely and was discharged in the usual course of events. To-day, two months after her discharge, I have readmitted her suffering from a very severe attack of scarlet fever, both rash and throat being characteristic. 2. I admitted two cases of severe scarlet fever in the early part of the year; during the peeling stage, which was very profuse, they were both taken with rigors, sore-throat, and a fresh rash, just as if they had never had scarlet fever before. 3. Some three years ago I discharged a child who had peeled freely from scarlet fever and had been two months in the hospital. Within a fortnight she was readmitted with a well-developed rash and sore-throat and peeled again all over freely. I have been connected with this fever hospital for some 15 years and have seen some hundreds of cases of scarlet fever, and I must confess that these cases puzzle me very much. I should be glad to know if a similar experience is common at other fever hospitals and, if so, what is the explanation of these cases?

I am, Sirs, yours faithfully,
Brentford, Oct. 13th, 1903. CHARLES DIXSON, M.D. Durh.

A MINISTER OF PUBLIC HEALTH.

To the Editors of THE LANCET.

SIRS,—I have recently had the honour of presenting a communication to the International Congress of Hygiene on the need for Ministries of Public Health and in consequence I beg to be allowed to make certain suggestions. Briefly, I believe the formation of a Health Ministry to be necessary to national prosperity if the latter is to be based on a sound foundation. It is more important than fiscal reform, than War Office reorganisation, than very many matters that fill the lay press day by day, but public opinion is insufficiently aroused and educated at present. How to create a popular "vote" in the interests of health is the work of those associations and congresses that are considering, or have considered, the matter. The British Medical Association, the Sanitary Institute, the Royal Institute of Public Health, the Imperial Vaccination League, the housing associations, the Manchester and Salford Sanitary Association, the Madrid Congress of Medicine, the Childhood Society, the proposed Physical Education League, &c., and many eminent medical and lay men will doubtless combine forces at no distant date. Above all, the British Medical Association could influence representatives of the governing bodies through its branches over the British world to form an Imperial Ministry of Public Health somewhat as in Germany.

In order to raise the matter above party or sect and to place it on the level of international well-being and amity it is necessary to approach the English and foreign members of the international committees of future congresses of hygiene and medicine and to obtain an official recognition of the subject on the programme. The views of eminent men of all countries could be obtained thereby, sound conclusions arrived at, and action taken. I do not think it is necesary to labour the point as to the need for a strong State Health Department. Mr. Balfour's recent words applied to the Macedonian trouble appear very applicable, however, at home, where charity is said to begin—viz., a "policy of humanity" is the "policy of wisdom."

Hitherto the evolution of public health progress has followed panic consequent on outbreaks of epidemic diseases such as cholera, small-pox, &c. This should be replaced in the name of common sense and in accordance with our own interests by the continuous and consistent educational efforts of a Ministry. The amount and exercise of the authority that such an expert Minister should possess may be suggested by the opinions of Lord Rosebery in the matter of the War Office, whose expert chief should have important relations to the Cabinet.

I am, Sirs, yours faithfully,
Plymouth, Oct. 15th, 1903. F. BUSHNELL.

*** We have already referred to the subject in an annotation which appeared in our issue of Oct. 10th, p. 1028.—ED. L.

SECONDARY HÆMORRHAGE AFTER ENUCLEATION OF THE EYE-BALL.

To the Editors of THE LANCET.

SIRS,—Referring to the case under the care of Sir William J. Collins which was recorded in THE LANCET of Oct. 3rd, p. 958, I had a similar experience of persistent hæmorrhage (following Mules's operation) several years ago in a patient with hæmophilia which quickly yielded to plugging the orbit with pledgets soaked in perchloride of iron which he does not appear to have tried. From his case it would seem that ancient as well as modern treatment is still of value and worth a trial. For in these days of rapidly increasing new drugs, &c., I fear that we all have a tendency to dispose of much valuable treatment as obsolete.

I am, Sirs, yours faithfully,
W. C. ROCKLIFFE, M.A. Cantab., M.D. Dub.,
Honorary Ophthalmic Surgeon, Hull Royal Infirmary.

Oct. 19th, 1903.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Traffic in Sores.—The Slow Progress of Sanitation in India.—The Plague Epidemic.

THE nuisance of beggars in India is intensified by the numbers of leprous and diseased cripples who haunt the thoroughfares of most towns. In Bombay it is complained that they stand in rows endeavouring to excite the compassion of passers-by. The sight is not only offensive but revolting and there is probably danger in allowing so many lepers to move about and to live in the most densely populated quarters of the town. The very worst cases and the most contagious are the most in evidence. In Calcutta this traffic in sores is also a serious and constant evil. There is a growing opinion that the time has come for these pitiable mortals to be prevented from turning their misfortunes to account in earning a livelihood to the nuisance and danger of the public and that adequate provision will have to be made to keep them out of the way.

A Government review of the work of the district boards in Bengal throws a side light on the slow progress of sanitary matters in India. With no less than 42 of these boards it appears that only Rs. 16,237 (about £1082) were spent in sanitary matters other than water-supply and drainage and

the report says that beyond improvement of the water-supply by constructing, repairing, and improving wells and disinfecting them no important works of sanitation were undertaken by the several district boards during the year, though the usual arrangements were made for the sanitation of fairs. It appears that the boards have money allotted to them for the improvement of tanks (as sources of water-supply), but in many cases they could not expend the money because, forsooth, the zemindars who own them were unwilling either to excavate them themselves for the benefit of their tenants or to make them over to the boards. This is the old story. These native landlords draw their steady incomes in the way of rent from the poor peasants (the peasants in nearly all cases owning their own huts) but they will not expend a farthing of it for the benefit of those tenants. Sanitary improvements will never be effected without some form of compulsion.

Since I last reported there has been a great increase in the mortality from plague throughout India. Last week's figures gave a total of 13,998 deaths which compares very unfavourably with 8821 for the corresponding week of last year. The usual autumnal revival has set in with even greater virulence than ever. Bombay Presidency reports 9163 deaths, Bombay city 73, Central India 1712, Berar 745, Mysore State 673, Central Provinces 340, Punjab 83, United Provinces 70, Bengal 39, and Calcutta 27. There have been slight decreases in the Madras Presidency and Hyderabad State. The cities of Allahabad, Cawnpore, and Meerut are all involved by a sudden infection. In Mhow the outbreak continues to be very virulent. Here there has been a real effort made to effect permanent sanitary improvement—viz., by condemning some 150 houses in the most crowded parts of the bazaars. Over 100 deaths a day have been reported and up to Sept. 19th 3744 deaths have been recorded. A small amount of inoculation has been practised with satisfactory results. Of 1200 persons inoculated 12 only contracted plague and there was only one death. The Lucknow people complain that so little is done to combat the plague epidemic. Last year the city had 4000 deaths and 20,000 people fled away. The municipality declines to adopt measures for the extermination of rats and it is thought that the Government is too much inclined to consult native opinion by which the plague officers are deprived of moral support. A serious consequence of plague measures has shown itself in the Punjab during the past year in the increased number of burglaries and offences against property, especially in evacuated houses. This has consequently acted against this salutary measure; the public fearing the loss of their property. With the abandonment of inoculation and the stoppage of the only other successful measure against plague the prospects for the ensuing season are black indeed.

Oct. 3rd.

POST-GRADUATE WORK ABROAD.

IV. BUDAPEST.[1]

(BY A SPECIAL CORRESPONDENT.)

THE object of the present article is to call attention to the excellent facilities for post-graduate instruction which may be obtained in Budapest, especially for workers along the special lines to be more fully described below. This city, the capital of Hungary, is four hours distant from Vienna by express train and has a population of over 500,000 people. The hospitals, of which the three larger ones contain over 2300 beds, draw their patients from an unusually extensive area of surrounding country and are consequently well supplied with clinical material. In addition to these general hospitals perhaps the most important teaching centre is the central "Kliniken" which is in reality made up of a number of buildings devoted to the special branches. These central clinics contain from 800 to 900 beds and all branches of medicine are here represented. Special mention may be made of the new surgical section and the new gynæcological section in connexion with these clinics, since they embody all the latest ideas on the subject of hospital construction and are admirably equipped. The physicians and surgeons in charge of these clinics—the more specialised departments of which will be outlined below—are very cordial in the reception accorded to visiting colleagues and offer them many of the facilities enjoyed by themselves. For those who have had especial training in gynæcology and obstetrics, pathology, and diseases of the ear, nose, and throat, Budapest has great attractions, mainly because of the fact that these particular fields are not overcrowded with seekers after knowledge, that visiting colleagues are always welcome, and also that along the lines last mentioned the actual work may be done by the worker himself. Similar facilities can, of course, be secured in other cities on the continent, notably in Vienna, but the ever-present difficulty attendant upon the overcrowding of the field to the detriment of the advanced workers who may contemplate a sojourn on the continent purely for the purpose of "doing the work himself" will be found, perhaps, less evident in Budapest than anywhere else. With regard to language, Hungarian, of course, predominates, but without exception all the medical men in charge of clinics speak German and many of them French and English as well.

Pathology.—Special mention must be made of the excellent pathological institute in connexion with the central clinics above mentioned which is undoubtedly one of the best equipped laboratories in Europe and which was erected some years ago at a cost of £50,000. The necropsies made in this particular institute number over 1000 yearly and ample opportunity is given to workers in pathology of carrying out the examinations themselves. Visitors are most cordially welcomed by the director, Professor Pertik, and every facility and encouragement are given by him to those who desire to undertake particular lines of research. A special working table is allotted to those who contemplate making a prolonged stay and the large stock of museum specimens which have been accumulated during the last nine years, together with an excellently arranged collection of over 10,000 microscopical sections, are freely placed at their disposal. The system of recording the daily observations made in the post-mortem room is an especially good one and the reports of the last 8000 or 9000 cases, arranged in a manner easy for reference, will be found a valuable aid to workers along the statistical lines of research. Professor Pertik's demonstrations during the semester are particularly good from the teaching standpoint, since microscopical preparations of the macroscopic material to be demonstrated are fully described and the mechanism of death is carefully considered.

Gynæcology and obstetrics.—The Universitäts Frauen-Klinik—the gynæcological section of the central clinics—the old Semmelweiss clinic—is in charge of Professor Barsony. This clinic is new and very well equipped in accordance with modern ideas; it contains 100 beds for obstetric cases and 40 beds for gynæcological cases. The last yearly report showed that there were 1542 births with two maternal deaths, while in the gynæcological department 298 in-patients were treated, with five deaths. There are 3000 out-patients yearly attending this clinic.

The finest special hospital in Budapest, and perhaps even in Europe, with a possible exception in favour of the recently opened hospital in Dresden, is the new building devoted to gynæcology and obstetrics, which, however, is not connected with the central clinics so far described. This hospital is in charge of Professor Tauffer, formerly first assistant to Professor Hegar in Freiburg, and contains 120 beds. The service here is a large one, consisting of about 2500 in-patients and out-patients yearly in gynæcology, together with about 1000 in-patient and 1500 out-patient midwifery cases yearly. Service in this hospital is offered as follows: first month as interne in obstetric service; second month on out-patient obstetric service; and third month as interne on gynæcological service. This, of course, implies living in the hospital and carries with it a small monthly fee paid to the incumbents.

Surgery.—The opportunities open to post-graduate guests for doing operative work are necessarily few. (In this connexion the word guest is to be taken literally, differing markedly in this respect from many of the other centres of instruction in Europe, since the so-called "private courses" common to Vienna and Berlin, in which a small class is made to cover the ground under an assistant, are made remuneratively worth the assistant's time.) These opportunities will, however, probably be found less difficult to obtain here than elsewhere for those who will be able to spend a few months in the service either of the surgical section of the central clinics or in one of the many hospitals.

[1] No. I. (Paris), No. II. (Berlin), and No. III. (Vienna) were published in THE LANCET of Sept. 12th (p. 781), Sept. 26th (p. 912), and Oct. 17th (p. 1121), 1903, respectively.

Guests will be appointed "externists" which implies actual service in the dispensary and after about two months of such service participation in the major operative cases. Professor Dollinger and Professor Reczius are in charge of the surgical sections of the central clinics. This section contains 180 beds; 1400 in-patients are treated yearly and there are from 800 to 900 operations yearly. The dispensary service is divided as follows: (1) general surgery, 5000 patients; (2) orthopædic, 2000 patients; and (3) genito-urinary, 1000 patients. Professor Navratil is in charge of the surgical work in St. Rocus Spital. This contains 100 beds. The in-patients number 1500 yearly, while the dispensary service numbers 11,000 during the same period.

Laryngology and rhinology.—In this department work may be secured in the clinics of Professor Irsai, Professor Onody, and Professor Navratil. For those who wish to study tuberculosis of the larynx the clinic of Professor Irsai may be especially recommended as it is particularly rich in material of this description and Professor Irsai is exceptionally liberal in apportioning operations. The daily average of patients is from 60 to 70. The clinic of Professor Onody is to be recommended for the study of the affections of the nose and the accessory sinuses. (His researches along the lines of the anatomy of the sinuses in recent years make his clinic an especially interesting one from this point of view.) The material here, however, is somewhat less than in the one mentioned above. Professor Navratil occupies the chair formerly held by Czermak who in the early days of laryngology did, perhaps, more than anyone else to advance the science. Attached to the clinic are 24 beds and the yearly number of in-patients is abont 550. The dispensary service averages over 3000 patients yearly.

It is not intended that this short article should convey the idea that at last the Mecca for post-graduate work has been found. I merely wish to imply that for a certain class of workers in gynæcology and obstetrics, in pathology, and in diseases of the nose and throat, Budapest will be found an ideal post-graduate school. Such workers need not content themselves with being mere onlookers but may assist the operator or in certain circumstances may do the work themselves. There must be many who would desire to do their post-graduate work under such conditions and to them I cordially recommend a trial of Budapest.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Housing Problem.

AT the recent Worcester Diocesan Conference this subject was matter for a lengthy discussion, a motion, which I had previously communicated to you, having been brought forward by Dr. A. H. Carter who pointed out that whilst the difficulty in London was a want of houses that in Birmingham was of a different nature. The last report of the housing committee had shown that there were 785 houses to be let at rentals of 4*s.* per week. Back-to-back houses were the chief evils in Birmingham, where there were some 42,000 of them. Undoubtedly thousands of our fellow men and women were living under housing conditions fundamentally incompatible with physical efficiency, comfort, or moral decency. Dr. Carter also defended the housing committee of the corporation which has come in for a good deal of adverse criticism. There never was a time, he said, when the municipal authorities were displaying more energy or had a stronger grip of the problems which the housing question involved and were engaged in work which was more likely to be crowned with success than at the present time. The committee's plan was to make the best of existing property. It was opening up courts, pulling down houses so that courts previously inclosed opened up to the street, and seeing that dwellings were put in proper repair. This work was done at surprisingly small cost and he thought that the citizens should be grateful to the civic authorities for the work which they were doing. An extremely interesting report has been issued by the housing committee for the consideration of the council at its next meeting. It is based upon the evidence which has been obtained during the past 12 months from persons engaged in philanthropic work and others and is thus a very valuable contribution to the literature of a question which has recently assumed such great importance. According to this report the reasons for the existence of so many unsatisfactory houses in Birmingham are that in past times many houses were erected in such a way as to be unfit for habitation according to modern ideas of sanitation. For a number of years the corporation refrained from doing more than ordering minor repairs for fear of increasing the overcrowding in the other houses if extensive pulling down was resorted to. The history of the Birmingham improvement scheme shows that this fear was baseless, for the destruction of 478 houses at that time did not lead to the results which might have been feared. Many of the unfit houses are occupied by persons of drunken and dissolute habits; indeed, the condition of the houses is often due to the tenants themselves. On the other hand, the evidence shows that there are a large number of persons living in cheap houses who could, and would, pay a higher rent if they could get a better class of house. At the same time, there is a proportion whose circumstances will not permit of their paying more than 3*s.* or 4*s.* per week in rent, who are respectable in spite of their poverty, and who keep their houses clean and tidy. It had also been shown by the evidence collected that for some years very few houses have been built to let for less than 5*s.* 6*d.* per week. The reasons for this are that land has largely increased in value, wages in the building trade have gone up from 20 to 30 per cent. during the last 20 years, and materials have risen considerably in price. The rates are higher and the building laws are much more stringent. Moreover, the average working man requires better accommodation than he used to do. There has been a considerable exodus from the centre to the outskirts of the city, where many industries have been established of late years. The housing committee declares that it desires to do all in its power to encourage a high standard of living and the exodus above spoken of. The committee does not recommend a policy of municipal house building and gives the following as its reasons: 1. Experience shows that in spite of the fact that corporations can borrow money cheaply municipal house building is more expensive than any other. 2. Municipal houses if let at a lower rent than those around must be let at a loss. This means that one class of ratepayers is paying part of the rent of another. 3. The evidence shows that rate-aided competition in house building and letting will drive everyone else out of the field, with the result that the supply will not meet the demand and a house famine will ensue. As a matter of fact, since the council decided to hold its hand in the matter of house building schemes for the erection of flats at rentals of from 3*s.* to 6*s.* 3*d.* per week have been started by two different persons. 4. It is urged that the community ought to provide good cheap houses for the respectable poor. But these are just the people who will not come forward for such houses: they will have to be sought for. Meantime, the applications of those who present themselves would have to be scrutinised in an inquisitorial manner impossible for a public body. And supposing such an inquiry were carried out, those just above the limit for admission to a cheap house would suffer a great injustice and would be tempted to earn lower wages, by doing less work, in order to qualify for the better and cheaper house. 5. Municipal house building is a form of rate-aided charity to the poorest inhabitants which must press heavily upon those ratepayers above that limit but who already find it difficult to make both ends meet. 6. The only effect of municipal house building, supposing it to reduce rent all over the city, would be to benefit employers of labour, since it is a well-known fact that wages follow rent. The committee recommends: 1. That every house in the city which is unfit for human habitation should be made fit as soon as possible and that the corporation should do what it can to encourage, and if necessary to compel, the landlords and tenants to keep their houses clean and in good order. 2. That congested courts should be opened to the streets, cleared of all obstructions, and the out-buildings rearranged so that a proper amount of light and air is admitted to every house that remains. 3. That open spaces should be provided in the city wherever possible for the rest and recreation of the people. 4. If, and when, the above proposals create a scarcity of good, cheap houses, then, and not till then, should the corporation contemplate a scheme of municipal house-building. 5. Some of the by-laws have been modified so as to decrease the cost of building without at the same time interfering with the sanitary condition of the houses. It should be considered whether more might not be done in this direction. 6. Miss Octavia

Hill's system of rent collecting, which has been so successful in other places, should be started without further delay in Birmingham. 7. The installation of an up-to-date and complete system of trams in the city itself and cheap through means of communication between the city and its suburbs, so that working men who have to earn their living in the city may be able to live in the country where land is cheap and the air fresh, is strongly to be insisted upon. If this policy is vigorously and prudently followed for the next few years it will, in the opinion of the committee, enable and encourage the poorer section of the community to live in more comfortable and sanitary surroundings. A copy of the evidence given by the numerous witnesses is appended to the report in question.

Medical Practitioners' Union.

The annual meeting of the Birmingham and District General Medical Practitioners' Union recently held, together with the report of the council presented at that meeting, shows that the affairs of the society are in a flourishing condition. The membership is now 281, that being an increase of 31 on the numbers for the previous year, and the treasurer's balance-sheet shows a substantial sum on the right side. The report calls attention to the fact that a code of ethics has been drawn up during the year and circulated. Of this code I have already given an account in your columns as well as of the action of the union in connexion with the notification of cases of chicken-pox.[1] A series of regulations dealing with club practice have been drawn up by the executive committee and are to be circulated amongst the branches for criticism. The union has now secured for itself a position of strength which has never previously been attained by any similar organisation in the city and is perhaps the more needed because the branch of the profession whose interests it has at heart is so singularly in the minority on the ruling bodies of the Birmingham branch and the Birmingham division of the British Medical Association. The six representatives on the branch council from the central (Birmingham) division consist of five consultants and but one general practitioner, whilst of the 15 members of the executive committee of this division 11 are consultants. Considering that general practitioners are to consultants at least as five is to one this division seems a curious one and has been much commented on.

Oct. 20th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Dangers from Sewer Gases.

THE city coroner, Mr. E. A. Gibson, held an inquest on Oct. 14th as to the death of a labourer named Foley employed at some chemical works at Clayton, Manchester. He was working at the foot of a well about 14 feet deep when he was overcome by a rush of gas, was drawn up from the well in an unconscious state, and died before a medical man arrived. A witness said that Foley collapsed as he was descending the ladder and that he himself was overcome when going down to bring him up. Another man tried to reach Foley but the fumes drove him back. The medical evidence was that death was caused by asphyxiation. After Foley was drawn up one witness noticed a smell of sulphuretted hydrogen. One of the corporation river inspectors said that he had investigated the matter and after he had taken a rod from one of the six-inch drains there was a rush of greenish liquid containing sulphuretted hydrogen and carbon dioxide. He said that the liquid which went into the drain was not the result of any process of manufacture, "it was drainage from a sump heap." Such a mixture as went into the sewer would give off noxious gases. "The lesson he drew from the occurrence was that the danger could be stopped." He did not think that there was negligence but with their present knowledge the firm should be expected to make the conditions different. "The presence of the gas in the well could not have been foreseen." Dr. Fowler, chemist to the rivers department of the corporation, agreed with this evidence and said that in the course of the investigations more than 600 samples had been taken from the well and drains. The coroner said that "it was clear that there was 'carbonite' in this drain and that, coming in contact with the acid, it had created carbon dioxide gas." Whatever the chemical changes may have been a deadly gas was produced. "The jury could not come to the conclusion that there was anyone to blame so far as the use of the sewer was concerned." The verdict was "Death by misadventure." These deaths from sewer gases, occurring as they do in Manchester too frequently, are greatly to be deplored, for they ought to be guarded against. This was evidently felt by the jury, "who added a recommendation that the corporation should make use of their powers to keep noxious vapours out of the drains and sewers." They also very properly "strongly urged that where wells of this description were used proper appliances should be at hand and that ropes should always be used." These are self-evident precautions which ought not to require enforcing by a coroner's jury and something might surely be done to drive off noxious gases before the descent of workmen.

River Pollution: a Good Word for Salford.

The action of the Mersey and Irwell joint committee against the Salford corporation again came before Judge Parry on Oct. 14th. Mr. Strachan, an expert as to sewage purification, presented some time since a report of what was needed which was adopted by the Salford council, which had practically undertaken to carry out Mr. Strachan's plans. It seems that two pumps are at work and a third is to be erected within the next six months when there will be three at work each capable of pumping 14,000,000 gallons a day. At present the pumping power is inadequate. Judge Parry said his view was that the corporation had done extremely well in this matter now. "As they had put forward this scheme in what he thought a most statesmanlike spirit he supposed the joint committee would try to assist them," which was promised on behalf of the committee. An extension of time was given to the corporation till Oct. 14th, 1904.

Music Licences and Sanitation.

On Oct. 12th some of the applications for music licences were heard before the Manchester justices which had been adjourned either on sanitary grounds or because the premises were unsuitable or for other reasons. The applications were chiefly by beer-sellers and some people may be surprised to hear of the size of the rooms in which it was intended that the charms of music should intensify that of beer drinking. Licences were wanted for rooms 12 or 13 feet by 10 or 11 feet. One beer-seller said that a music licence had been attached to his house for 40 years and entertainments had been given all that time in a place 12 feet 9 inches by 10 feet 9 inches. "Paid talent" was employed, for he had a pianist and a "chairman" and a gramophone. In another case the applicant employed "a blind young lady" as pianist in a room 18 feet by 11 feet. One man wanted his licence renewed for a room like a long passage 29 feet 6 inches by 7 feet 10 inches but the magistrates would not have concerts in passages. This case was adjourned for the production of plans. In several cases the concert rooms could not be reached except through bars or private living rooms and sometimes they were so placed as to be inaccessible to police supervision or there was no retiring accommodation apart from that of the family. One can imagine the pestilential state of the air of many of these rooms crowded with the unwashed in their unwashed clothing, well filled with the smell of beer, and obscured with the fog of tobacco smoke. A considerable number of the applications were refused.

Dr. C. J. Cullingworth on Charles White.

An interesting meeting of the Manchester Medical Society was held in Owens College on Oct. 7th, Dr. A. M. Edge, the President, being in the chair. Dr. Cullingworth delivered an address upon Charles White. The address, the major portion of which appeared in THE LANCET of Oct. 17th, p. 1071, was followed with the greatest attention and interest.

Oct. 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

The Winter Medical Session in Edinburgh.

THE middle of October brings with it the end of the holiday season in Edinburgh and the medical classes have been opened by the various lecturers in the usual undemonstrative fashion. The most important change in the University is the transference of the teaching of anatomy from the veteran

[1] THE LANCET, May 2nd, 1903, pp. 1270-71.

teacher Sir William Turner to his distinguished former pupil Professor D. J. Cunningham. In the pathological department an enlarged and greatly improved bacteriological section has been provided by an ingenious expedient. Old students will remember that the practical pathology room in the University new buildings was a very lofty one. By taking some feet off the unnecessary height of the practical class room and adding them to the space under the slates without removing the roof excellent accommodation for the bacteriological department was obtained. This has been done with Carnegie Trust money. The number of students attending this special subject has largely increased and it is said that this result is due to students availing themselves of the Carnegie funds for taking extra classes. It might be well to mention here that students may have their fees paid for extra-mural as well as for University classes, provided that they are studying for a University degree. The Carnegie Trust is also interesting itself in the extra-mural school and in the Medical College for Women. It has indicated its willingness to consider applications for grants for equipment for teaching purposes and these are at present under consideration with a view to arrangements being made that will be satisfactory to the Carnegie trustees. A further development on the part of the trust is that it has taken over the Royal Colleges laboratory on certain conditions. The building has been purchased from the Royal College of Physicians by the trust but the laboratory work is directed by a committee in which the College has the larger number of voices. Another matter of interest which coincides with the opening of the winter session is the opening of the new City Hospital for Infectious Diseases at Colinton Mains. Last week it was thrown open on one day for inspection by the members of the medical profession and on several other days to the general public.

Imported Enteric Fever at Glasgow.

In THE LANCET of Sept. 19th, p. 852, reference was made to a series of cases of enteric fever which had occurred in Glasgow and which were due to the eating of shell-fish. The bacteriological examination undertaken by Dr. R. M. Buchanan, the city bacteriologist, has now been completed. He reports as follows. The circumstances attending the recent outbreak of typhoid fever amongst the holiday visitors from Glasgow and other places to one of our west coast towns in the latter part of July pointed to shell-fish as the most probable source of the infection. In each case it appeared that shell-fish had been eaten raw or partially cooked and that symptoms of typhoid fever ensued after the lapse of the usual incubation period of about a fortnight. The shell-fish were gathered by the visitors themselves from an area of foreshore constantly polluted by the sewage of the town and of two large public institutions. The shell-fish examined were collected within the sewage-polluted area and also at some distance therefrom where shell-fish are gathered for market. All the varieties of shell-fish (cockles, mussels, winkles, and "muscin") from the sewage-polluted area bore evidence in almost every specimen examined of the presence of a bacillus of excremental origin—namely, the bacillus coli, a bacillus the natural habitat of which is the intestine and the presence of which is an accepted indication of sewage contamination. Cultures of this bacillus were found to have a high degree of virulence, killing guinea-pigs within 18 hours. On the other hand, the shell-fish obtained at a distance of from one to one and a half miles from the sewer outfall were entirely free from the bacillus coli—a fact which indicates that they were beyond the range of sewage contamination and that they might be regarded as perfectly safe for edible purposes. In this fact also we have evidence that shell-fish under normal conditions do not contain this micro-organism and that its presence is therefore an invaluable indication of sewage contamination. It also affords support to those who contend for the proper supervision of oyster, cockle, and mussel beds and laying grounds with a view to their protection against pollution by sewage. It was only in the third series of specimens examined that any trace of a bacillus resembling that of typhoid fever was found and there it was very manifest and abundant. In plate cultures from three cockles collected at 200 yards and one cockle and one "muscin" collected at 600 yards below the sewer outfall it was readily detected. It was a remarkable fact that this bacillus was obtained in great numbers and almost in pure culture in one of these plates. The shell-fish which yielded this almost pure growth was a cockle found on the surface at 200 yards from the sewer outfall. Surface cockles are regarded by cockle-gatherers as "sick" and are carefully avoided by them. It is, however, just such cockles as the inexperienced would be likely to pick up and to partake of, even in the raw condition. As regards the specificity of this bacillus it was found to have all the microscopical and cultural characteristics of the typhoid bacillus. Further, it gave the characteristic typhoid reaction with human typhoid serum and with serum obtained from a guinea-pig immunised against typhoid fever. The finding of this bacillus in such numbers and in so many individual shell-fish is so exceptional that it was repeatedly subjected to trustworthy culture tests and to repeated serum tests and always with the result of proving its identity in every respect with the typhoid bacillus obtained from a case of typhoid fever. The conclusions arrived at are: (1) All the edible shell-fish within the area of sewage contamination showed by the presence of virulent bacillus coli excremental pollution and their consumption must therefore be regarded as highly prejudicial to health; (2) the shell-fish beyond the range of sewage contamination were found to be normal and perfectly safe for edible purposes; and (3) certain shell-fish (cockles and "muscins") within the area of sewage contamination showed the presence of the bacillus of typhoid fever in great number and the consumption of similarly infected shell-fish by holiday visitors in the end of July would sufficiently explain the outbreak of typhoid fever which occurred amongst them after return to their own homes in Glasgow and elsewhere.

University of Glasgow.

The opening of the winter session took place on Oct. 16th. The number of students already enrolled in the various classes is large but another week will require to pass before the work of the session is in full swing. One effect of the Carnegie Trust has been to establish a more uniform rate of fees in the different Scotch universities. Thus, in Glasgow there has been an increase in the fees of most of the medical classes. Formerly for most of them the fee was three guineas, but now it is four guineas, as in Edinburgh.

Nichol Memorial Window.

An interesting ceremony took place on Oct. 17th in the Bute Hall of the University of Glasgow where a memorial window was unveiled. This window, executed by Mr. Henry Holiday of London, was presented to the University by Mr. William Jack, LL.D., professor of mathematics, and his two sons, Dr. William R. Jack and Mr. Adolphus A. Jack, in memory of John Pringle Nichol, LL.D., the celebrated professor of astronomy, his son John Nichol, LL.D., professor of English literature, and his daughter Mrs. Jack. The window was presented to the University by Professor Jack in the names of himself and his sons. Principal Story accepted the gift on behalf of the University. Lord Kelvin and Professor John Ferguson also took part in the proceedings. Professor Jack and his sons received their friends in the Randolph Hall after the conclusion of the ceremony.

Anderson's College Medical School, Glasgow.

The winter session of this school was opened on Oct. 16th by Major Ronald Ross, C.B., F.R.S., professor of tropical medicine, University of Liverpool, who delivered an address on Medical Science and the Empire. He said that if half of the world was not to remain inaccessible to civilisation the diseases which were the scourges of the tropics would have to be overcome. That could not be done by the soldier, by the politician, or by the trader, but only by the efforts of the medical profession. In the evening Major Ross was entertained to dinner in the Council Hall at the City Chambers. On the invitation of the Lord Provost (Sir John Ure Primrose, Bart.), the chairman (ex-Bailie W. F. Anderson) and the members of the health committee a large representative company was present. Major Ross, in replying to the toast of his health, said that the way in which malaria was carried had been definitely ascertained and he would like to see a more general effort by the authorities in this country to deal with the prevention of it in a really business-like manner. Liverpool and Manchester had been actively engaged with this question for a long time and they felt assured that if Glasgow would act with them it would have a good effect. The Lord Provost, in replying to the toast of "The Corporation of the City of Glasgow," proposed by Sir Hector C. Cameron, said that he had no doubt that the corporation would be very willing to support Major Ross in his project of imperial and international coöperation for the prevention of malaria.

St. Mungo's College, Glasgow.

The winter session was opened on Oct. 15th, when an interesting address was delivered to a large gathering by Dr. David N. Knox on the History of Surgery in the Royal Infirmary.

Obituary.

Many will learn with regret of the death at Cradock, Cape Colony, of Mr. Robert Fergus Hutchison, M.B., Ch.B. Aberd., son of Mr. Thomas Hutchison, Ingleside, Cults. Dr. Hutchison had for some time been in weak health and more than a year ago he went to South Africa where he at first showed signs of recovery, only to be seized some weeks ago by a fatal illness. The deceased, who was 28 years of age, graduated in 1898. He subsequently devoted himself to bacteriological work and pursued his studies in London and Paris, returning to Aberdeen a few years later as assistant to Professor D. J. Hamilton. In the line of research which he had chosen Dr. Hutchison gave promise of attaining high distinction.

The Mitchell Family and Marischal College, Aberdeen.

The suggestion that some fitting memorial of the late Mr. C. W. Mitchell of Jesmond Towers, Newcastle-on-Tyne, should be secured for Marischal College, Aberdeen, has been received with general favour. There is already in the picture gallery of Marischal College a bust of Mr. Mitchell's father, the late Dr. Charles Mitchell, and a proposal has informally been made to the effect that a companion bust of Mr. C. W. Mitchell might also be procured for the picture gallery. The total sum which father and son gave to the University of Aberdeen was upwards of £54,000. Dr. Mitchell gave in all £33,000 towards the extension scheme, while Mr. C. W. Mitchell extinguished the debt on the University amounting to £21,171. The cheque for the final instalment of this sum was recently received from Mrs. C. W. Mitchell who is deeply interested in the extension scheme.

Rectorial Address at the University of Aberdeen.

The Right Hon. C. T. Ritchie, M.P., Lord Rector of the University, is to give his rectorial address on Oct. 29th and on the occasion of his visit is to be entertained by the Senatus.

Oct. 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Ireland.

THE annual meeting of the Royal College of Physicians of Ireland was held on Oct. 19th when the officers for the ensuing year were elected. A motion expressing regret for the recent death of Sir George F. Duffey was passed in silence. Dr. L. Atthill tendered his resignation of the office of representative of the College on the General Medical Council and Sir John W. Moore was elected thereto.

The Granard Union Trouble.

At the last meeting of the board of guardians which took place at Granard on Oct. 19th a resolution was passed appointing as master the official who was recently dismissed by sealed order of the Local Government Board. A conciliatory letter was read from Dr. J. M. S. Kenny in which he again expressed "regret for the unpleasantness of the past." One of the guardians proposed that it should be thrown into the waste-paper basket. It was afterwards, however, decided to forward it to the bishop, Dr. Hoare. Major Fane, who represented the Local Government Board, said that the Board would appoint a master very soon and he warned the guardians that if it became necessary to replace them by two paid guardians it would cost the ratepayers £500 per annum.

Monkstown Hospital.

At a meeting of the committee of the Monkstown Hospital held on Oct. 15th Sir Charles B. Ball was appointed honorary consulting surgeon to the institution.

Smiley Hospital, Larne.

The Smiley Cottage Hospital, Larne, founded through the munificence of Sir H. H. Smiley, Bart., Larne, and endowed by him to the extent of £5000, is now completed and will be ready in a few weeks for the reception of patients. There are wards for male and female patients, each for six adults, and there are in addition spacious day rooms so designed that in case of emergency four additional beds may be placed in each, which will bring the total accommodation of the ground floor up to 20 beds. There is an admirably fitted-up operating room and the most up-to-date sanitary arrangements have been supplied. The hospital will be under the management of a representative consultative committee and a ladies' working committee. The medical staff will be the medical men resident in Larne and Ballyclare.

Queen's College, Belfast.

The session opened on Oct. 20th in the medical faculty. Dr. Max Freund has been appointed Professor of Modern Languages in place of Dr. A. L. Meissner, and Dr. John McLiesh has been selected to lecture on Vaccination. Great sorrow has been felt at the news of the death on Oct. 18th of Professor J. Purser who for many years was professor of mathematics and who trained three senior wranglers, Allen, Larmor (secretary of the Royal Society), and Orr. Old friends of the late Dr. Charles MacDonall will be pleased to hear that an interesting book by him, "The Origin of the Legend of the Holy Grail," edited by his widow, has just been published.

Royal Victoria Hospital, Belfast.

On Oct. 20th in the extern room of the new Royal Victoria Hospital Dr. J. Walton Browne, senior surgeon, delivered an interesting opening address before a crowded audience of students and practitioners. After welcoming the students at the beginning of a new winter session Dr. Browne gave a full and very much appreciated account of the history of the Belfast School of Medicine from its earliest beginnings up to the present time when clinical work begins in the new and beautiful hospital recently opened by the King.—At a meeting of the corporation of the hospital held on Oct. 19th a motion was passed authorising the board of management to sell or to let all or any portion of the old hospital property belonging to the corporation situated in Frederick-street and Lancaster-street, Belfast. The city corporation had the first offer of the place to use it as a temporary fever hospital until the new city hospital was ready but it declined. The income derived from the old hospital is to go to the support of the Shaftesbury Ward in recognition of the generous treatment which had always been received from the Donegal family.

Death of Dr. William Dobbin.

Dr. William Dobbin of Banbridge, co. Down, died recently in Belfast, in his sixty-first year. For some months past he had had symptoms of intestinal obstruction and on Oct. 16th Professor Thomas Sinclair resected a portion of the colon, but the patient's strength failed and he died on the night of Oct. 17th. Dr. Dobbin was the eldest son of a Presbyterian clergyman, the Rev. W. Dobbin of Annaglone, co. Down. He studied at Queen's College, Belfast, where he had a very distinguished career. In 1867 he graduated as M.D. in the Queen's University and in 1886 he became a Fellow of the Royal College of Surgeons in Ireland. He practised in Banbridge, where he was medical officer of the dispensary district and here he gathered round him a large *clientèle* who greatly esteemed and valued him for his professional knowledge. He leaves a widow, one daughter, and two sons, one of the latter being a member of the North-east Bar and the other an M.D. of Edinburgh University.

Oct. 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Cerebro-spinal Fluid of Patients in the Secondary Stage of Syphilis.

AT the meeting of the Hospitals Medical Society which was held on Oct. 9th M. Ravaut communicated in his own name and in that of M. Thibierge some statistics based upon the cytological examination of the cerebro-spinal fluid in 118 patients suffering from the secondary stage of syphilis; 54 of these patients had either no obvious secondary symptoms or only showed roseola and mucous or cutaneous plaques. Seven of these only gave a definite lymphocyte reaction, whereas out of 55 patients who showed pigmentary syphilides, papular syphilides, or syphilitic psoriasis, 41 showed a definite lymphocyte reaction, in some cases very marked. Two patients suffering from syphilitic alopecia and two other patients in which facial paralysis

had supervened during the secondary period showed marked lymphocytosis. Of five patients suffering from syphilitic iritis one only showed lymphocytosis. In all the patients who showed the cellular reaction the quantity of albumin, which only exists in very small quantity in normal cerebro spinal fluid, was much increased. It would seem, therefore, that these facts prove that in patients affected with secondary syphilis there exist together with certain cutaneous reactions nervous reactions which are to be diagnosed by an examination of the cerebro-spinal fluid and these nervous reactions would appear to develop on parallel lines with those of the skin. The reactions should be regarded as one of the many manifestations of syphilis and when present would appear to show that the treatment should be very thorough.

A Scheme for a Hospital for Infectious Diseases.

Among the new buildings included in the great plans which have been taken in hand by the Assistance Publique and which have been approved by the Prefect of the Seine and by the Municipal Council is a hospital for infectious diseases which it is intended to build at Ivry-sur-Seine, in the district of Vitry, a building which is intended to replace a very poor hospital at present in existence at La Porte de Flandre. Here it is intended to treat patients suffering from typhoid fever, from small-pox, from diphtheria, and should occasion arise those afflicted with plague or cholera. The prospect, however, has no charms for the inhabitants of the neighbouring quarter of Paris—namely, that of the Port-à-l'Anglais in the division of Vitry. They have protested for some long time but the Assistance Publique has taken no heed. This body promises to isolate the building in an absolutely satisfactory fashion, but the promise has not assured those interested in the matter and they have sent a petition to the Prefect of the Seine begging him to ask the administration of the Assistance Publique to give up the idea of building a hospital for infectious diseases at a distance of only 250 metres from the communal school at Port à-l'Anglais which educates no less than 900 pupils. The Assistance Publique, however, declares that the fears of the inhabitants of Ivry are groundless and the best proof which is brought forward of the harmlessness of the proposed hospital is the fact that it will be situated almost alongside a large almshouse where there are some 2500 aged persons for whom nobody seems to have any fear.

French Congresses.

The sixteenth Congress of the French Association of Surgery was opened at Paris on Oct. 19th in the large theatre of the Paris Faculty of Medicine. The seventh congress of the French Association of Urology will be opened at Paris on Oct. 22nd in the Faculty of Medicine.

A New Method of Suicide.

A nurse at one of the hospitals has just tried a new way of committing suicide—namely, by swallowing two tubes of Eberth's pure culture of the typhoid bacillus. On the following day and the day after that she felt no inconvenience. On the third day she had some headache but no fever. On the sixth day she felt heavy and stupid and experienced great weakness in her legs, being obliged to take to her bed. On the seventh day her temperature was in the morning 37·6° C. and in the evening 38·6° C. On the eighth day she had two attacks of epistaxis and her temperature in the evening was 40·2° C. Several rose spots were also visible. On the tenth day serum reaction was positive. Otherwise the typhoid fever followed its normal course but it was a very severe attack and the patient had in all 176 baths. The remarkable points of this case are the very short duration of the period of incubation—namely, only two days—and the rapid appearance of the rose spots, eight days after infection. The physicians who reported the case—viz., M. Duflocq and M. Voisin—explained the very short duration of the incubation period by the large quantity of bacilli which were introduced at one time into the digestive tract.

Oct. 21st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Professor Behring on Tuberculosis.

THE most remarkable feature of the recent Congress of German Naturalists and Medical Men was the address on tuberculosis delivered by Professor Behring. He commenced by remarking that tuberculosis was an extremely common and widespread disease. A series of necropsies made by Professor Naegeli at the Pathological Institute of Zürich showed that in every instance signs of tuberculosis were present in persons over 30 years of age, in 96 per cent. of those from 18 to 30 years, in 50 per cent. of those from 14 to 18 years, in 33 per cent. of those from five to 14 years, and in 17 per cent. of those from one to five years. Similar results were obtained in living persons by Dr Franz, an Austrian army medical officer, who found that 68 per cent. of the men of an Austrian regiment reacted positively to the tuberculin test. It had been said that everybody was somewhat tuberculous, and this was true, but tuberculous infection did not always mean pulmonary phthisis. To produce phthisis two factors were necessary—namely, (1) a tuberculous focus and (2) bodily conditions which favoured the development of tuberculosis. Professor Behring was of opinion that communication of pulmonary tuberculosis to adults by contagion had not yet been demonstrated. In the cases of butchers, laboratory servants, and others who contracted cutaneous tuberculosis it had never been proved that pulmonary tuberculosis had ensued. The speaker then alluded to the statistics concerning nurses, prisoners, and other classes of the community which were especially liable to develop pathisis. It was, according to him, not their free exposure to infection but the conditions of their life which predisposed them to phthisis, the process being in reality the conversion of a latent focus of disease into an active one. Medical men engaged in laryngological practice were exposed to continual risks of infection, but nevertheless tuberculosis was not frequent among them because of the absence of other prejudicial influences, such as insufficiency of food. The fundamental theory of Professor Behring is that tuberculosis nearly always begins at the earliest period of life and that the germs are communicated to children by milk. He said that his views might at first sight appear rather peculiar, for if infants were not suckled by the mother the milk on which they were fed when brought up by hand was boiled or even sterilised. Adults, on the contrary, usually drank milk without previously boiling it or taking any other precaution. The cause of the liability of infants to become infected was not the contamination of the milk alone but in a great degree the condition of their gastro-intestinal canal which by reason of its great permeability was not capable of protecting their systems against the invasion of germs. Dr. Romer, Professor Behring's assistant, found that in newly born animals albuminates penetrated through the mucosa into the circulation quite unaltered, just as if they had been directly introduced into the blood; in the intestines of adult animals, on the contrary, the albuminates were transformed into soluble peptonates previously to being absorbed. Attenuated cultures of anthrax bacilli given with their food to newly born guinea-pigs appeared afterwards in the blood. Cultures of tubercle bacilli administered in the food always produced tuberculosis of the glands in newly born and very young animals; with older animals, on the other hand, this occurred only sometimes and not unless very virulent cultures in great quantities had been taken. Although the virus was ingested and infection communicated at a very early age, many years might pass before the disease became recognisable by the tuberculin test. Under prejudicial influences, such as exhausting illness, chills, bad food, unwholesome dwellings and the like, the tuberculous infection might then develop into pulmonary phthisis. From this point of view Professor Behring spoke favourably of the hygienic and dietetic treatment of pulmonary phthisis. His principal object, however, was to discover a method which, like Jenner's vaccination against small-pox, would act against tuberculosis and would eventually render sanatoriums and other therapeutic measures unnecessary. Speaking of the tuberculosis of cattle he stated that this disease was more prevalent in these animals than was generally believed; the presence or absence of latent tuberculosis could be ascertained by the tuberculin test with absolute certainty. He then alluded to the method devised by him which enabled cattle to be immunised by injections of an antitoxic substance and which was being more and more used by farmers. Immunising substances were found in the milk of immunised cows and he had reasons for believing in the possibility of preserving these immunising substances so that they might be sent abroad without losing their efficacy. Concerning human tuberculosis Professor Behring stated that his researches were not yet finished; he said that for the

prophylaxis of tuberculosis in human beings two ways were open—namely, either isopathic immunisation or treatment by antitoxins. He thought that isopathic immunisation might be accomplished in the human species by the inoculation of a relatively attenuated virus of tuberculosis; the antitoxin used for cattle was, however, not fit for that purpose, and even if an immunising substance had been already obtained in that way he would hesitate to inoculate children with it. Among calves treated by the injection of attenuated cultures of bacteria one in 500 might die in consequence of the inoculation and in the human subject it would be obviously impossible for such a responsibility to be accepted deliberately. It was conceivable, however, that the isotherapeutic protective immunisation might become available for children if his experiments succeeded so far as to allow the administration of the attenuated virus of tuberculosis together with food by feeding infants on the milk of immunised cows. As his researches were not yet finished he was unable to supply a remedy against tuberculosis. In conclusion Professor Behring criticised the theories of Professor Koch on the non-identity of human tuberculosis and perlsucht. From the fact that bacilli of human tuberculosis did not produce perlsucht in cattle Professor Koch has concluded that the two species are not identical: this, however, was erroneous. Jennerian vaccine did not produce variola in the human subject, nevertheless no one believed that the virus of vaccine and that of variola were different. Professor Koch, moreover, relied on the fact that infants very seldom contracted intestinal tuberculosis; this argument has, however, now been refuted by his (Professor Behring's) researches on the permeability of the infant's intestinal mucosa. Professor Behring was therefore strongly opposed to any relaxation of the milk control in the manner suggested by Professor Koch. Finally, he said that although some of Professor Koch's views might require to be reconsidered he must ever be regarded as one of the most eminent investigators in connexion with tuberculosis.

Oct. 20th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Swiss Balneological Society.

THE annual meeting of the Swiss Balneological Society took place on Oct. 4th at the picturesque little town of Rheinfelden, celebrated for its saline baths. The salt beds above which Rheinfelden is situated are 114 metres (380 feet) deep and were discovered in 1844. A number of hotels now provide for the accommodation of the thousands of health-seekers who annually frequent the place in search of relief from manifold ailments, such as chlorosis, amenorrhœa, metritis, disease of the uterine adnexa, scrofula, rheumatic and gouty affections, chronic heart disease, and the various neuroses.—Dr. Keller of Rheinfelden, well known in the scientific world by his various treatises on the physiological and clinical effects of saline baths, spoke on the geological conformation of Rheinfelden and its surroundings. The saline water (Soole) was, he said, the strongest in Europe, containing 311·6 parts of chloride of sodium in 1000 parts of fluid, so that the saline constituent formed 31 per cent. (Sea water contains from 3 to 4 per cent. of chloride of sodium.) The strongest saline baths on the continent, well known as spas, were Inowrazlaw, in Germany (30 per cent.); Bex, in Switzerland (27·5 per cent.); Hall, in the Tyrol (25·5 per cent.); Ischl, in Austria (23·6 per cent.); Salies de Béarn, in France (21·6 per cent.); and Kreuznach, in the Rhine province (16·4 per cent.).—Dr. Theodore Zangger of Zürich spoke on the various indications for the use of weak and strong saline baths. He distinguished normal baths (up to 3 per cent. strength corresponding to sea water), stronger baths (up to 6 per cent.), and very concentrated ones of 8, 10, 12, 25, and even 31 per cent. As the Rheinfelden and Bex saline waters were used for bathing purposes all over Switzerland and were prescribed most extensively both for home use and in bathing establishments it was very desirable that they should be of the proper strength and carefully supervised. Individual treatment was indispensable. Of late the higher strengths were much in vogue but they had to be prescribed with care. The effects of 3 and 6 per cent. saline baths differed greatly, as, in fact, Dr. Keller had demonstrated many years ago by physiological experiments. The former increased diuresis by from 10 to 23 per cent. and the excretion of chlorides by from 31 to 42 per cent.; the latter reduced diuresis by 2·7 per cent. and caused only a small increase of the excreted chlorides (6 per cent.). Such variations should receive clinical investigation. Strong saline solutions unquestionably had not only their indications but also their contra-indications and the latter deserved to be carefully studied. They were best prescribed at spas, where the patient had from four to six weeks' complete rest for a proper course of treatment.—Dr. Keller, in his reply, said that it was impossible to give distinct outlines of the indications with regard to strong saline baths. Some patients, especially those with long-standing bone affections, with metritis and myomatous tumours, derived the greatest benefit from them, such as could not be obtained from weak saline baths. Thus other saline spas on the continent (Reichenhall, Ischl, and Inowrazlaw) were introducing stronger baths and following the example which the French spas, especially Salies de Béarn in the Pyrenees, had given for many years.—After the meeting the members inspected the various buildings in connexion with the saline baths of Rheinfelden and assembled at the Grand Hotel for the annual dinner. In 1904 the annual meeting will take place in September at Lugano and Dr. Reali of Lugano has been elected president.

Zürich, Oct. 19th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Canadian Medical Association.

THE thirty-sixth annual meeting of the Canadian Medical Association was held at London, Ontario, on August 25th, 26th, 27th, and 28th, under the presidency of Dr. Walter H. Moorhouse of that city, who is dean of the medical department of the Western University. It proved to be the second largest meeting in the history of the organisation, being only eclipsed by that of last year which was held at Montreal. Dr. James Newell (Watford, Ontario) read a paper on the Surgical Treatment of Hallux Valgus and Bunions. Dr. R. Ferguson (London, Ontario) presented an interesting specimen of an Incompletely Developed Uterus and Appendages removed from the sac of an inguinal hernia. The patient was 32 years of age and was married but had never menstruated. The external genitals and mammary glands were normally developed but the vagina was a mere cul-de-sac without trace of cervix or os. Every four or six weeks the patient had been subject to violent headaches which drove her to the point of distraction. Four and a half months had elapsed since the operation and she had been absolutely free from the attacks of headache. This finished the forenoon session of the first day. In the afternoon the meeting assembled in surgical and medical sections. In the former section Dr. A. B. Atherton (Fredericton, New Brunswick) was appointed chairman and in the latter Dr. R. W. Bruce-Smith (Brockville, Ontario). In the medical section the first question taken up and discussed was the Treatment of Typhoid Fever, which was opened by Dr. W. P. Caven (Toronto). In the opinion of Dr. Caven the conditions calling for active treatment are tympanites and hæmorrhage. For the former he recommended turpentine and asafœtida and for the latter morphine. There should be routine sponging in every case, tepid where the temperature was below 102° F. but above that degree cold sponging should be carried out. Dr. John Herald (Kingston, Ontario) continued the discussion, stating that he would not employ internal medication in ordinary cases. In hæmorrhage he considered the ice-bag to be as useful as morphine. Dr. H. A. McCallum (London, Ontario) lauded strychnine throughout the attack as the most important agent in the treatment of this disease. Dr. J. T. Duncan (Toronto) next read a paper on the Size of the Pupils as an Aid to Diagnosis. Dr. Hornibrook (Cherokee, Iowa, U.S.A.) read a paper discussing the most recent phases of Auto-intoxication. The paper which excited the keenest interest in this section was that by Dr. Jennie Drennan (St. Thomas, Ontario) on the Physiological Generative Cycle in Woman. She stated that evolution was incident to all forms of life. The factors in every phase of life were adaptation to environment and heredity. Structure was determined by function and function was the product of environment. The function of the female mammal was ovulation, pregnancy,

and gestation. This cycle had become interrupted by ovulation and menstruation as the result of adaptation to a pernicious environment. The remedy to effect the restoration of the natural cycle would in time be improved environment. In the surgical section Dr. Hadley Williams (London, Ontario) reported on, and exhibited, a very interesting case of Gunshot Injury of the Shaft of the Humerus with destruction of two inches of the musculo-spiral nerve. Four months after the accident the case was brought to him at which time non-union and complete paralysis were present. The nerve and two inches of bone were dissected out and the nerve ends were brought together by through-and-through silk sutures. There was neither union of bone nor relief of the paralysis as a result of this operation. Four months after the first operation he performed a second in which the ends of the bone were maintained in apposition by means of a silver plate secured to the shaft as a splint by four silver screws. In six weeks the bone had united and in nine months from the suture of the nerve ends the paralysis had disappeared and recovery was complete. The treatment of the case was original and the essential details were pointed out as being firm apposition of the fragments by means of the plate and screws and the avoidance of tension on the nerve ends. By placing muscle between the bone and nerve involvement in the callus was avoided. Dr. Henry Howitt (Guelph, Ontario) then reported two cases of Hour-glass Contraction of the Stomach; one was complicated by an ulcer on the posterior wall of the stomach and the other by cancer. Both cases were much relieved by operation. Dr. R. P. Robinson (Ottawa) reported two cases of operation for Morbus Coxæ resulting in cure without shortening, although both cases had reached the abscess stage. Dr. Robinson does not allow his patients to walk for six months. Dr. J. A. Hutchison (Montreal) reported five cases operated on for Typhoid Perforation. The fifth only was successful. The rate of recoveries with operation was now 20 per cent.

A general session was held on the evening of the first day at which Dr. Moorhouse delivered the annual presidential address. He touched upon the importance and advantage of attending meetings like those of the Canadian Medical Association which year by year was becoming of great influence in the medical life of the Dominion of Canada. Charlatanism should be resisted with a steady and constant hand. Dominion registration was something to be desired and he hoped that Quebec would come to its senses and not further frustrate the labours of Dr. Roddick. Following the able deliverance of the President, Dr G. M. Gould (Philadelphia—the editor of *American Medicine*) read an important paper on the Rôle of Eye-strain in Civilisation and Medicine. A lantern lecture on the Open-air Treatment of Consumption was then conducted by Dr. J. H. Elliott, medical superintendent of the Gravenhurst Sanatorium. Following this Dr. E. J. Barrick (Toronto) read a paper advocating the establishment of municipal sanatoriums, the outcome of which was a resolution urging the Government to enact legislation providing for municipal sanatoriums for consumptives.

On the forenoon of the second day, before assembling at the convention hall, clinics were held and operations were performed at the two general hospitals of London. Much regret was expressed at the absence of Dr. Matthew D. Mann (Buffalo, U.S.A.) who was to deliver the address in Gynæcology at the commencement of the morning session. In the medical section Dr. Sprague (Stirling, Ontario) gave a character sketch of the Country Doctor in Canada, and being somewhat of a cartoonist he was able to make the paper a very interesting one. Dr. George F. Butler (medical superintendent of the Alma Springs Sanatorium, Alma, Michigan, U.S.A.) read a very important and able paper on the Inter-Relations of Diabetes and other Constitutional Diseases, a paper which was highly commended by Sir James Grant (Ottawa), Dr. R. A. Reeve (Toronto), and Dr. Samson (Windsor, Ontario). In the surgical section Dr. Theodore A. McGraw (Detroit, U.S.A.) read a paper entitled "Practical Considerations on Intestinal Anastomosis." In his procedure he draws the gangrenous coil out of the abdomen far enough to permit him to unite the two limbs of the bowel at a point where they seem healthy by means of a rubber ligature. All of that part which is liable to slough is then fastened outside the abdomen and the wound is closed around it. The immediate result is a false anus and in two or three days a new channel has been cut by the rubber ligature and the false anus becomes unnecessary. It may then in time close spontaneously or be closed by the simple operation of inverting and suturing the ends. The advantages over other methods are thus described by Dr. McGraw: simplicity and quickness of application; its aseptic quality, for the rubber fills the opening through which it passes so completely that no extravasation is possible; the delay in opening the passage until the intestines have become well glued together; and the ability to make with it a communication of any desired length. An interesting case of Thrombosis of the Femoral Vein following Laparotomy was then reported by Dr. E. R. Secord (Brantford, Ontario). The thrombosis occurred two weeks after an aseptic operation for double inguinal hernia in which the wounds healed by first intention. The thrombosis was on the left side, where a truss had been worn for 12 years. The address in Surgery was delivered by Dr. Alexander Hugh Ferguson (Chicago) and the address in Medicine by Dr. McCallum. The former took for his subject the Surgery of To-day and the latter read a very able address on the Influence of the Lymph Circulation. In the medical section on the afternoon of the second day Dr. E. G. Wood (Nashville, Tennessee), professor of medicine in the University of Tennessee, read a carefully prepared paper on the Cardiac Affections in Influenza. This excited a good deal of discussion. Other papers contributed were one by Dr. Alexander McPhedran (Toronto) on Amyotrophic Lateral Sclerosis and one by Dr. A. L. Benedict (Buffalo, New York). Dr. Adam Wright (Toronto) read a practical paper on Concealed Accidental Hæmorrhage. Various excursions and a banquet concluded the day's work.

At the business meeting of the morning session of the fourth day the following officers were elected: President, Dr. S. J. Tunstall (Vancouver, British Columbia); treasurer, Dr. H. B. Small (Ottawa); and general secretary, Dr. George Elliott (Toronto). Vancouver was selected as the place of meeting in 1905. A committee was appointed to invite the British Medical Association to meet in Toronto in 1905.

Oct. 10th.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following medical degrees were conferred on Oct. 15th:—

Bachelor of Medicine.—J. G. Cooper, Trinity.

Bachelor of Medicine and Bachelor of Surgery.—W. F. L. Day and A. O. M. Fehrsen, Gonville and Caius; and F. P. Edwards, Downing.

The First, Second, and Third (Part I.) M.B. examinations will begin this year on Dec. 14th; the Third (Part II.) M.B. and the M.C. examinations will begin on Dec. 8th.—Professor Howard Marsh has begun his lectures on the Principles of Surgery in the new medical school, the buildings of which are nearing completion.

UNIVERSITY OF EDINBURGH.—At the special graduation ceremonial held in the M'Ewan Hall on Oct. 17th the following degrees and certificate were conferred:—

Doctor of Medicine.—*Edmund Thurlow Potts, England, M.B., Ch.B., 1901.

Bachelor of Medicine and Master in Surgery.—Frederic Russell Bremner, M.A., Scotland.

Bachelor of Medicine and Bachelor of Surgery.—Roland Thomas Graves Aickin, New Zealand; Farhat Ali, B.A., India; John Allan, Scotland; Marcus Armly Ash-Kenny, Roumania; Thomas Charles Blackwell, England; William Armour Brown, B.Sc., Scotland; Ernest Elgin Cassaday, Scotland; John Walker Cathles, Scotland; Alfred Berridge Cox, England; William Barbour Alexander Kennedy Culleu, England; George Gordon Cumming, Scotland; George Augustus Davies, B.A., England; John Findlay, New Zealand; †Auckland Campbell Geddes, Scotland; Williamson Godfrey, India; William Demby Sainter Harrison, England; John Ockert Heyns, Cape Colony; Algernon Fitz-Roy Hughes, Grenada; Muhammad Inayat Ali Khan, India; John Mountney Lovett, England; Thomas Archibald MacKenzie, Scotland; William Mackenzie, M.A., B.Sc., Scotland; Charles Edward Marshall, New Zealand; Philip Woodgate Mason, England; James Henry Cubitt Orr, Scotland; Trevor Charles Ensor Parry, Wales; William Hamilton Simpson, England; Thomas Theodore Thomson, England; Ernest Albert Turpin, British West Indies; Caroline Twigge, England; John Andrew Leslie Wallace, Scotland; and David Charles Welsh, Scotland.

Bachelor of Science.—James Andrew Gunn, M.A.; and in the department of agriculture, Thomas Foster Main and George Clay Muirhead.

Special University Certificate in Diseases of Tropical Climates.—Roland Thomas Graves Aickin, M.B., Ch.B.; Farhat Ali, B.A.,

M.B., Ch.B.; John Allan, M.B., Ch.B.; Marcus Armly Ash-Kenny, M.B., Ch.B.; Muhammad Inayat Ali Khan, M.B., Ch.B.; Charles Edward Marshall, M.B., Ch.B.; and Thomas Theodore Thomson, M.B., Ch.B.

* Commended for thesis.

† Passed the examinations with second-class honours.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Giovanni Vitali of Modena has been recognised as *privat-docent* of Internal Medicine.—*Copenhagen:* Dr. Alexander Vincent has been recognised as *privat-docent* of Physiology and Dr. Axel Blad as *privat docent* of Internal Medicine.—*Freiburg:* Dr. Richard Link has been recognised as *privat-docent* of Internal Medicine, Dr. Karl von Eicken as *privat-docent* of Laryngology, and Dr. W. Herrenknecht as *privat-docent* of Odontology.—*Halle:* the title of Professor has been granted to Dr. A. Tschermak, *privat-docent* of Physiology, and to Dr. Ernst Vahlen, *privat-docent* of Pharmacology.—*Kazan.* Dr. V. Bormann has been recognised as *privat-docent* of External Pathology.—*Königsberg:* Dr. R. Beneke of Göttingen has been appointed to the chair of Pathological Anatomy vacant by the resignation of Dr. Neumann.—*Moscow:* Dr. Talientseff has been appointed Extraordinary Professor of General Pathology.—*Naples:* Dr. Antonio Anile and Dr. Vastarini-Cresci have been recognised as *privat-docenten* of Anatomy, Dr. F. Scotti as *privat-docent* of Internal Pathology, Dr. F. Jacobelli and Dr. L. Rizzo as *privat docenten* of External Pathology, Dr. A. Plantieri as *privat-docent* of Operative Medicine, Dr. L. Mosca as *privat-docent* of Dermatology, and Dr. D. Durante as *privat-docent* of Paediatry.—*Pavia:* Dr. Tansini of Palermo has been appointed Professor of Clinical Surgery in succession to the late Dr. Bottini.—*Prague (German University):* Dr. Fischl, *privat-docent* of Anatomy, has been promoted to an Extraordinary Professorship; Dr. Walko has been recognised as *privat-docent* of Internal Medicine.—*Rome:* Dr. Mattoli has been recognised as *privat docent* of Surgical Anatomy and of Operative Medicine.—*Vienna:* Dr. Rudolf Schmidt has been recognised as *privat docent* of Internal Medicine, Dr. Heinrich von Halben as *privat-docent* of Neurology and Psychiatry, Dr. Alexander as *privat docent* of Otology, and Dr. Pupovac as *privat-docent* of Surgery.

NEW CREMATORIUM FOR THE CITY OF LONDON.—Mr. R. W. Edwards, chairman of the sanitary committee of the Corporation of London, laid the foundation-stone of the new crematorium at Ilford Cemetery, acting for the City of London Burial Board. The ceremony took place on Oct. 14th. The new crematorium is being built in a secluded part of the cemetery. The design is Gothic in style and is intended to harmonise with the existing chapels in its vicinity. The plans provide for a hall 27 feet in length by 24 feet in width for the mourners to assemble in, with a waiting room 13 feet by 13 feet adjacent and leading out of the hall. The catafalque upon which the coffins will rest will be placed in the centre of the hall and an ante-chamber is provided for the attendants between the hall and cremating chamber. The cremating chamber is at the rear of the hall and will be of sufficient size to admit of two cremating furnaces being erected with an arrangement for the bodies being placed in either furnace by means of a traverse. At the present time it is intended to erect only one furnace, the flue for which will be carried up in the centre of an ornamental tower about 80 feet in height. A small auxiliary furnace will be placed at the base of the tower for the more perfect combustion of the gases arising from the cremating furnace and a staircase is provided for access to the summit. There is to be a basement under the cremating chamber from which the furnace will be attended to, also stores for fuel, the entrance to the same being at the rear of the structure. The cost of the work, including the furnace, will be about £7000. Mr. Edwards in the course of his remarks said that the Corporation of London was now leading the way in the special direction of sanitary science, the crematorium being the first in course of erection within any cemetery of the United Kingdom and the first in course of construction by any corporation or municipal body within the vast metropolis of London. When Sir Henry Thompson in the year 1874 introduced in this country the question of the disposal of our revered dead by means of cremation, perhaps it would not be too much to say that the idea was regarded with antipathy and met with a shudder. The late Commissioners of Sewers of the City of London had the question of providing a crematorium brought before them by one of their members in the year 1891 and although meeting with some opposition it was referred to a committee to consider and to report. The committee reported that the commissioners had no power in the suggested direction. Later in the year 1894 the question was again raised on a motion to promote a Bill in Parliament to obtain the necessary powers. This although agreed to at the time was afterwards rescinded. The subject, however, was not lost sight of and on the promotion of a Various Powers Bill in the year 1900 a clause was inserted giving the corporation the necessary powers to erect a crematorium on this spot. The sanitary committee was not slow in moving the exercise of the power obtained and by an order of the Court of Common Council of Jan. 17th, 1901, it was referred to the committee to consider and to report as to the erection of a crematorium in this cemetery under the powers conferred by the Act of 1900, with instructions to submit plans and estimates for the proposed buildings. Later authority was given to the committee to inspect various crematoriums and a subcommittee visited the crematoriums at Hull, Manchester, and Liverpool, and also the crematorium of the Cremation Society of England at Woking. Plans were prepared and ultimately the Court of Common Council sanctioned those now in process of execution.

THE GUILD OF ST. LUKE.—The annual festival service of the Guild of St. Luke was held at St. Paul's Cathedral on Wednesday evening, Oct. 21st. A very large number of the medical profession attended in their robes and were seated under the dome. The musical portion of the service was beautifully rendered by the special choir of the London Church Choir Association under the able conductorship of Dr. Walford Davies. The Magnificat and Nunc Dimittis were Walmisley in "D" minor and the anthem was Brahm's "How lovely is Thy dwelling-place." The service was intoned by Minor Canon Morgan Brown and the lessons, which were taken from the 38th chapter of Ecclesiasticus and the 10th chapter of the Gospel according to St. Luke, were read by the Rev. W. H. H. Jervois, vicar of St. Mary Magdalene, Munster-square, N.W. An eloquent sermon was preached by the Rev. Prebendary Montague Villiers from Job xxxii., verse 8, the preacher addressing himself principally to the problems which continually confront the members of the clerical and medical professions alike and which would be insoluble were it not for the incarnation of Jesus Christ.

ST. GEORGE'S HOSPITAL.—The Rev. Dr. Warre, headmaster of Eton College, distributed the prizes to the successful students of the St. George's Hospital Medical School on Oct. 15th in the board-room of the hospital. Afterwards he gave an address to those present, in which he referred to the system of examinations. He said he was discontented with things as they were and was liable to make others discontented. Yet he saw no remedy, nor was he able to propose anything which would mitigate the evils of the present system and would at the same time satisfy the public conscience as a method of testing competency or judging merit. Before long, however, the question must demand serious consideration upon a wide platform. He would therefore turn their attention at the present time to the subject of sympathy and its value as a personal influence in the noble profession to which their lives and their energies would be devoted. The mere feeling of emotion at the sight of suffering did not give sympathy any right to rank as a virtue. Such feelings had to be schooled and disciplined if the public were to be supplied with physicians and surgeons capable of fulfilling the duties of their calling. It was no part of sound training to repress these feelings altogether or to sear and to harden the heart so that it became incapable of feeling them. True sympathy was not limited to passive impressions which diminished as active habits increased, nor was it purely emotional, but it was something wider and higher and far more richly endowed with power for good than those passive impressions which were the characteristics of its embryonic stage. In the great treasury of professional success there were many chambers, each of which had its own lock and its own key. Knowledge and skill, patience and accuracy, each of these opened a door and each brought its own reward to successful labour. But the innermost chamber of all could only be unlocked and entered by those who through self-discipline had gained the golden master-key of true sympathy. As to the acquisition of this gift and grace of true sympathy he thought it was not possible of attainment by those whose training left them callous to another's pain and whose

aspirations were merely selfish. It might be that hospital practice was not altogether favourable to the acquisition of a sympathetic habit of mind, but that was only all the more reason for students to stir up that gift within them in moments of reflection. In private practice a medical man saw all sorts and conditions of men and he would find the need of that sympathy which self-discipline alone could impart. The key to the knowledge of man was true sympathy and to be able to enter into the feelings of another was the first step towards being able to interpret them and in the right interpretation very often lay the secret of relief. He therefore claimed a place for real sympathy in their equipment as medical men.

LITERARY INTELLIGENCE.—Dr. Gerald Leighton (editor of the *Field Naturalist's Quarterly*) has finished his book on "British Lizards" which will be published immediately by Mr. G. Morton, Edinburgh. The work is a companion volume to the author's "British Serpents" which was published two years ago. It is to be copiously illustrated by reproductions of photographs of living lizards taken by Mr. Douglas English.—The August number of the *Maryland Medical Journal* states that Mr. and Mrs. Harold McCormick have endowed a new medical journal to be known as the *Journal of Infectious Diseases*. Its editors will be Professor Ludvig Hektoen and Professor E. O. Jordan of the University of Chicago. The value of the endowment is $125,000.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—Mr. James Rowlands Essex, M.R.C.S. Eng., J.P., of Pontypool, Monmouthshire, was on Oct. 10th presented with an illuminated address by the workmen of the Glyn collieries as a mark of respect and esteem on the occasion of his retirement from practice.—The members of the Druids Friendly Society at Wiveliscombe, Somerset, have presented to Mr. J. Wyatt Pratt, M.R.C.S. Eng., L.R.C.P. Edin., L.S.A., who has been lodge surgeon for the past 26 years and is now retiring from practice owing to ill-health, an ormolu-gilt clock and vases and an illuminated address as a mark of their respect and esteem. Miss Pratt was presented with a pair of silver flower vases.

DEATH OF MR. LEWIS A. TALLERMAN.—The death is announced as having taken place suddenly on Saturday last, whilst entertaining some friends at dinner at the Langham Hotel, London, of Mr. Tallerman whose name is well known in connexion with the localised application of superheated dry air. Whether or not Mr. Tallerman was, as he claimed to be, the inventor of the system, which was introduced to the profession in a clinical lecture delivered at St. Bartholomew's Hospital on May 23rd, 1894, by Mr. A. Willett, F.R.C.S. Eng., and thereafter used in that and many other hospitals, he without doubt spent a large sum of money in making known the treatment which bears his name and he was very severe on any similar treatment which he conceived to be an imitation or adaptation of his own. Mr. Tallerman, who amassed a considerable fortune in Australia in commercial pursuits, although of an excitable disposition at times, had withal a genial nature and opened several institutes in different parts of the country for the gratuitous treatment of the necessitous poor by his system. He died at the age of 58 years and was buried on Wednesday last at Willesden.

THE METROPOLITAN ASYLUMS BOARD AND ALLEGED PREMATURE DISCHARGE OF A SCARLET FEVER PATIENT.—At a meeting of the Metropolitan Asylums Board on Oct. 17th the hospitals committee reported that it had had before it a letter of complaint from the father of a patient at the Grove Hospital named Arthur Wright alleging premature discharge and consequent spread of scarlet fever among other members of his family and claiming compensation. After considering the medical investigator's report upon the case an approved reply was sent to Mr. Wright stating that a close examination into all the circumstances relating to the discharge of his son did not enable the special subcommittee which dealt with correspondence of that class or the medical investigator to account for the illness which followed his discharge and pointing out that the rule of the Board was for no patient to be discharged until the medical superintendent of the hospital was of opinion that the patient might leave the hospital without risk of conveying infection or contagion and it was not until that opinion had been formed that his son was discharged. A writ had, however, been served on the Board's solicitors at the suit of the father of the patient claiming damages for negligence. The committee recommended that the Board's solicitors be instructed to take all necessary steps for defending the action. The recommendation was agreed to and the action of the committee was approved.

Dr. Dawson F. D. Turner has been awarded a Keith prize by the Royal Scottish Society of Arts for papers upon improved Roentgen apparatus and other electrical matters.

THE LORD MAYOR AND THE PRESS.—On Saturday evening, Oct. 17th, the Lord Mayor and the Lady Mayoress gave a banquet at the Mansion House "to meet the President of the Institute of Journalists and representatives of the London Press." A large company was present and some interesting speeches were delivered by the Lord Mayor, Mr. Anthony Hope Hawkins, Mr. A. W. Pinero, Mr. Augustin Birrell, K.C., and others.

DONATIONS AND BEQUESTS.—Mrs. Alicia Isabella Hamilton O'Hara of Kingstown, Dublin, has under her will bequeathed £300 to the Eye and Ear Hospital at Dublin.—By the will of Mr. Henry Worton Elliott of Birmingham £100 are left to the General Hospital, the General Dispensary, the Queen's Hospital, and the Hospital for Sick Children, Birmingham, respectively.—An anonymous donor has contributed £1000 towards the funds of University College, Bristol.

THE UNIVERSITY OF LONDON.—The first meeting of the Faculty of Medicine in the session 1903–04 will be held at the University, South Kensington, S.W., at 5 o'clock P.M. on Friday, Oct. 30th. The chief items of business are (1) the consideration of communications from various interested bodies with reference to a proposal to establish a degree in veterinary science and (2) the consideration of recommendations to be made to the Senate with reference to the constitution for 1904 of the boards of studies with which the Faculty is concerned.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on Oct. 13th. The following were elected as officers for the ensuing year. President: Sir William J. Collins. Vice Presidents: Mr. C. H. Hopwood, Mr. A. J. Pepper, Dr. A. Bostock Hill, and Dr. M. Hay. Council: Dr. Garson, Dr. C. O. Hawthorne, Dr. T. N. Kelynack, Dr. Harvey Littlejohn, Dr. George Danford Thomas, Dr. F. J. Smith, Dr. W. McCallin, Dr. F. J. Wethered, and Dr. W. Wynn Westcott. Treasurer: Mr. John Troutbeck. Secretary: Mr. R. Henslowe-Wellington, assisted by Mr. S. B. Atkinson.

SOCIETY OF ANÆSTHETISTS.—The annual dinner of this society was held at the Café Monico on Oct. 16th.—Mr. C. Carter Braine, the President, received 52 members and guests, among the latter being several ladies, Dr. Urban Pritchard, Mr. Arthur E. J. Barker, Dr. C. J. Cullingworth, and others.—Dr. Cullingworth proposed the toast of "The Society." He said that Sir James Simpson, a gynæcologist, fought a hard fight for anæsthesia and won. Anæsthesia flourished for some time without science but was now on a scientific basis and advancing. He suggested that anæsthetists might sometimes be invited to give a lecture on their own experiences of, and views as to, operators. The former could institute useful comparisons between operators who, by the way, rarely saw each other operate. By publishing transactions the society invited criticism and its proceedings became permanent.—The President, in replying to the toast, avowed that the greatest honour to an anæsthetist was to be President of the society. It had existed now for ten years and started as a semi-social gathering for the discussion of cases. Then there was an influx of country and foreign members and later of practitioners interested in anæsthesia. The membership now was 91. During the present session there would be several clinical meetings. The presence of the lady members and their friends greatly helped to make the dinner a success.—Dr. Dudley W. Buxton proposed the toast of "The Visitors" in a witty speech.—Mr. Barker, in answer, acknowledged the debt of gratitude which surgeons owed to anæsthetists and emphasised the confidence which was placed in them.—Dr. Woollett proposed "The Health of the President" who suitably replied.—During the evening songs and recitations were excellently rendered by Miss Jessie Parker, Mr. Frederick Keel, and Mr. Patrick Kirwan.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ABRAHAMS, BERTRAM LOUIS, M.B., has been appointed Lecturer in Physiology to the Westminster Hospital Medical School.

ARNOLD, FRANK ARTHUR, M.B. Lond., D.P.H. Lond., District Medical Officer of Health, Eastern Transvaal, has been appointed Assistant Medical Officer of Health, Transvaal, Pretoria.

BLETCHLEY, G. P., M.B. Lond., has been appointed Certifying Surgeon under the Factory Act for the Nailsworth District of the county of Gloucester.

BOURKE, JAMES JOSEPH FITZGERALD, L.R.C.P. & S. Irel., has been appointed Medical Officer at Hughenden, Queensland, Australia.

BRIDGER, S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Act for the Southend District of the county of Essex.

BROWN, R. C., M.B., Ch.B. Melb., F.R.C.S. Eng., has been appointed Honorary Anæsthetist to the Alfred Hospital, Melbourne, Victoria, Australia.

CRAIG, J., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Act for the Biddulph District of the county of Stafford.

DANIELL, G. W. BAMPFYLDE, M.R.C.S., L.R.C.P. Lond., has been appointed Instructor in Anæsthetics to the Royal Infirmary, Edinburgh.

DIXON, B. GODFREY, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., has been appointed Medical Officer to the Walton Workhouse, Liverpool.

EDEN, T. WATTS, M.D. Edin., has been appointed Physician to the In-patients at the Chelsea Hospital for Women.

FORSTER, LUCINDA, M.B., B.S. Lond., has been appointed Medical Officer to the Quarantine Office, Suez.

HANSON, F. C., L.M. K.Q.C.P.I. and R.C.S.I., has been appointed Certifying Surgeon under the Factory Act for the Bray District of the county of Wicklow.

HARRISON, W. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S.G., has been appointed Medical Officer of Health for Wallaroo, South Australia.

HEBB, R. G., M.D. Cantab., has been appointed Lecturer in Pathology to the Westminster Hospital Medical School.

HEWLETT, J. E., M.B., M.S. Edin., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

HOPE, EDWARD CULPERTSON, M.R.C.S., has been appointed Medical Officer at Winton, Queensland, Australia.

JOHNSTON, G. JAMESON, M.A., M.B., R.U.I., F.R.C.S.I., has been appointed Honorary Surgeon, Masonic Orphan Boys' School, Dublin.

KANE, ROBERT ENGLISH, L.R.C.P. and S. Edin., has been appointed Medical Officer at Tarcoom, Queensland, Australia.

LLOYD, W. GIBBS, M.Sc., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer to the Walton Workhouse, Liverpool.

LONG, S. H., M.D. Cantab., has been appointed Medical Officer of Health of Cromer.

MACKEY, CHARLES, M.B., Ch.B. Vict., has been appointed Junior Resident Medical Officer, Manchester Children's Hospital, Pendlebury.

MULLEN, W. L., M.D. Melb., has been appointed Deputy Medical Superintendent of the Kew Lunatic Asylum, Victoria, Australia.

O'MAHONY, JOHN J., M.B., B.S. R.U.I., has been appointed Medical Officer of the Goleen District of Schull, Bantry.

PENNY, W. R., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Act for the Greenodd District of the county of Lancaster.

RIVIERE, CLIVE, M.D. Lond., M.R.C.P. Lond., has been appointed a Physician to the Out-patients at the City of London Hospital for Diseases of the Chest.

ROBERTSON, McGREGOR J., M.B., Ch.B. Edin., L.M., has been appointed Assistant Master of the Coombe Lying-in Hospital, Dublin [corrected notice].

ROE, WM. FRANCIS, L.R.C.P. Irel., L.R.C.S. Irel., L.M., has been appointed Physician to the Holloway and North Islington Dispensary.

STARK, A. CAMPBELL, B.Sc., has been appointed Lecturer in Biology to Westminster Hospital Medical School.

STEWART, C. P., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Act for the Perth District of the county of Perth.

WILSON, J. CLARK, M.D. Edin., has been appointed Clinical Assistant to the Samaritan Free Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, Kennington, S.W.—Resident Medical Officer for six months. Salary at rate of £40 per annum, with board and lodging.

BIRKENHEAD UNION INFIRMARY, WORKHOUSE, AND SANATORIUM.—Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

CANCER HOSPITAL, Fulham-road.—Supervisor of Electrical Arrangements. Honorarium £26 5s. annually.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Physician.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120, with board and lodging.

GLASGOW UNIVERSITY.—Three Examiners, each in Anatomy, Medical Jurisprudence, and Midwifery. Salaries, Anatomy £80, Medical Jurisprudence £50, and Midwifery £50, with hotel and travelling expenses. Also Examiner in Botany. Salary £50, with hotel and travelling expenses.

GORDON HOSPITAL FOR FISTULA, &C., Vauxhall Bridge-road, S.W.—House Surgeon. Honorarium £40 for 12 months, with board and residence.

GRAVESEND HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

HACKNEY UNION WORKHOUSE AND INFIRMARY, Homerton.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physician, for six months. Honorarium of £25.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence. Also Honorary Radiographer.

HOSPITAL FOR WOMEN, Soho-square, London, W.—House Physician for six months. Salary £30.

INDIAN MEDICAL SERVICE, India Office.—Twenty Commissions.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £100 a year, with board, lodging, and washing.

LONDON HOSPITAL, Whitechapel, E.—Physician to the Skin Department.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham-hill-road.—Honorary Surgeon for Children.

MELBOURNE, UNIVERSITY OF.—Chair of Physiology and Histology.

NEWCASTLE-UPON-TYNE UNION.—Assistant Medical Officer. Salary at rate of £150 per annum, with apartments, rations, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Physician for six months. Salary at rate of £80 per annum, with board, residence, and laundry. Also Assistant Physician. Also Resident Medical Officer. Salary £120 per annum, with board, residence, and washing.

NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board and residence.

PORTSMOUTH ROYAL HOSPITAL.—Assistant Surgeon for six months. Salary at rate of £50 per annum, with board, residence, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ROCHDALE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Assistant Physician.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary £100, with board and residence.

ST. THOMAS'S HOSPITAL.—Resident Assistant Physician.

SALISBURY INFIRMARY.—Assistant House Surgeon. Salary £75 per annum, with apartments, board, and washing.

SOUTH UIST PARISH (NORTHERN DIVISION).—Medical Officer. Salary £70.

SUNDERLAND, COUNTY BOROUGH AND PORT OF.—Medical Officer of Health. Salary £520 per annum.

SUSSEX COUNTY HOSPITAL, Brighton.—House Surgeon, unmarried. Salary £140 per annum, with board and residence.

WESTERN DISPENSARY, Rochester-row, Westminster, S.W.—Two Attending Medical Officers.

WISBECH, NORTH CAMBS. HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, attendance, coals, gas, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Physician. Salary £100 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory Act at Wigton, in the county of Cumberland, and at Newtown, in the county of Montgomery.

Births, Marriages, and Deaths.

BIRTHS.

BENNETTS.—On Oct. 14th, at Bozeat, Northants, the wife of F. Bennetts, M.R.C.S., L.R.C.P., of a daughter.

DEAN.—On the 19th inst., at Eversleigh, Banwell, Somerset, the wife of the late Andrew Buchanan Dean, M.B., C.M., of a daughter.

FOOKS.—On Oct. 17th, at the New Infirmary, Isleworth, the wife of W. Pemberton Fooks, M.A., M.B. Cantab., of a son.

ROSE.—On Oct. 14th, at High Beach-road, Loughton, Essex, the wife of Percy Rose, L.R.C.P. Lond., of a son.

MARRIAGES.

PEARSON—JONES.—On Oct. 15th, at All Hallows Church, Ordsall Retford, George Bruce Pearson, L.R.C.S., L.R.C.P., of Buckingham, to Maud Mary, only daughter of the late Samuel Jones and of Mrs. Jones.

WILSON—WRIGHT.—Oct. 14th, 1903, at St. Michael's Church, Markington, by the Ven. Archdeacon A. S. Aglen of St. Andrews, assisted by the Rev. S. A. Brooking, Vicar, Alex. Garrick Wilson, M.B. Camb., F.R.C.S. Eng., of Ranmoor, Sheffield, eldest son of J. Mitchell Wilson, Esq., M.D., of Cottingham, to Mary Evelyn, third daughter of the late Dr. J. Hodgson Wright and of Mrs. Hodgson Wright of Kirby Leas, Halifax.

DEATHS.

HUTCHISON.—At Cradock, South Africa, on Oct. 13th, Robert Fergus Hutchison, M.B., C.M., D.P.H., aged 28, dearly loved son of Thomas and Nicola Hutchison, West Cults, Aberdeenshire.

STURGES-JONES.—On Oct. 21st, at The Willows, Chichester, Charles Sturges-Jones, M.R.C.S., L.R.C.P., second son of the late Rev. Edward Jones, Rector of Milton Keynes, Bucks, in his 81st year.

TALLERMAN.—On the 17th inst., at the Langham Hotel, Portland-place, Lewis A. Tallerman of 50, Welbeck-street, aged 58.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE DIABETIC INSTITUTE AND THE DIABETES FLOUR COMPANY (INCORPORATED).

A CORRESPONDENT has forwarded to us a circular letter, a form of application for shares, and a prospectus which he received from the Diabetes Flour Company, the address of which is 15 and 16, St. Dunstan's-hill, London, E.C. The circular is marked "Private and confidential" but we have not the slightest hesitation in making the contents public. It states that no debentures are allotted to the general public but only to the members of the medical profession and to chemists. The subscription is offered not so much in order to procure by its means any additional capital for the sanatorium to be acquired but rather to make the members of the two professions, "on whose goodwill the success of our business entirely depends," profitably interested in the business and to secure their permanent cooperation by letting them share in the benefits to be derived from the growth and success of the company. As a special bonus, therefore, one founder's share of the value of £5 in proportion to every five debentures subscribed is offered. The circular goes on to state that the profits of the company have averaged during the last three years 23 per cent., and further the circular says that "the company, assisted by the cooperation of physicians and chemists, will, we are convinced, pay still larger dividends in the future." The prospectus gives an account of a mansion situated in Kent which is to serve as a sanatorium for the treatment of diabetic subjects. We consider this circular to be a direct insult to the members of the profession of medicine. It is neither more nor less than a bribe to induce medical men to tell their diabetic patients to buy the products of the Diabetes Flour Company; but yet worse remains behind. We have also received from another medical correspondent a letter in which he says: "The inclosed is the third communication from the same source that a patient of mine has received since obtaining starch-free foods from a London firm." The inclosure to which he refers is headed "The Diabetic Institute," of which the address is "St. Dunstan's-hill," the chief analyst is Professor Dr. E. D. Berghaus, the president is Henry S. Berry, the manager is E. E. Naegelen, and the secretary is W. Norris. Curiously enough the names of these gentlemen, with the exception of Mr. Naegelen, appear as holding the same offices in the Diabetes Flour Company, except that Mr. Berry instead of being called "president" is called "the chairman of the board of directors." This being so, we presume that the Diabetic Institute and the Diabetes Flour Company are one and the same commercial concern. Their telephone number is the same and their cable address is the same. The Diabetic Institute, however, boasts a chief consultant whose name is Dr. Aston-Davis and the letter which was sent to our correspondent's patient commences as follows:—"Dear Sir,—We have twice written to you calling your attention to the seriousness of diabetes and placing the services of the Institute at your disposal, but up to now have received no reply to all our communications." The letter goes on to say that advice is given gratuitously and finishes as follows: "What we have done for others we can do for you and any correspondence that may pass between us will be treated as strictly private and confidential. Will you please let us know what is the reason of your silence so that in case you do not need our services we may take you off our mailing list." This letter is signed "W. Fripp" or "Tripp," "secretary," although in the printed heading the secretary's name is given as "Norris." It is perfectly evident from these documents that the Diabetes Flour Company and the Diabetic Institute form a purely commercial speculation which endeavours to widen its business by attempting to bribe medical men and pharmaceutical chemists and by writing letters to patients suffering from diabetes which may frighten them into applying to the Institute for advice. Our contemporary *Truth* has already made some scathing remarks upon this concern and in its issue of Oct. 15th prints a copy of a postcard which has been addressed to chemists throughout the country. The postcard which is headed "The Diabetes Flour Company, 15 and 16, St. Dunstan's-hill," is as follows: "We pay 5*s.* for every address you may be able to procure us of persons suffering from diabetes. These addresses will be used for the mailing of our new catalogue and your information will be considered as strictly confidential. It is money easily earned." It would be interesting to know whence the Diabetic Institute obtained the knowledge that our correspondent's patient was suffering from diabetes unless it was communicated by someone in the employment of the diabetic-food-providing firm. Dr. Aston-Davis has, we presume, an American qualification; any way, we cannot find him in the current number of the Medical Register. Moreover, the factory of the Diabetes Flour Company is at Watertown, New York. Four of the directors are connected with New York firms and the fifth is a manager of the London branch of the Anglo-American Bank. American commercial methods may be "smart" but we do not like them as applied to medicine.

MOTOR-CARS FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Oct. 10th you invite replies to your correspondent signing himself "General Practitioner" on the above topic. I therefore hope that the following observations may be of assistance to "General Practitioner" and others who are thinking of investing in a motor-car. For the last 13 months I have used a small petrol car with the greatest satisfaction, and since having done so I have never for a moment contemplated reverting to horseflesh as a means of locomotion in the working of my practice. This notwithstanding the roads here are exceptionally hilly with a notoriously greasy surface after rain, the latter a most adverse factor in motoring. The pleasure of driving even a small car oneself is very considerable and the great saving of time effected by the use of a car and the fact that it is at all times instantly available are desiderata of much importance to medical men. As to reliability, a good modern car is at least as dependable as a horse. The cost of upkeep, including initial purchase money of a petrol voiturette, is probably less than that of a single horse and carriage. A plan I would recommend to "General Practitioner," if he be in the habit of keeping two or more horses, is to sell these and to buy two small cars of well-tried make—e.g., the Baby Peugeot or 6 h.p. De Dion. With these in his coachhouse he will be certain of having one or the other always available. With one car only, although, as a rule, it will be more than equal to any work he may require of it, it will occasionally happen that he is temporarily without a car owing to renewal of worn working parts, such as bearings, gears, tyres, &c. The cost of two small cars will not exceed that of a single car of twice the horse power with two or more cylinders, whilst they are as efficient for the purposes of a medical man as a larger car. Moreover, the cost of running a small motor is much less than one of medium or large power, pneumatic tyres largely accounting for the difference. Medical motorists may be grouped into two classes: (1) those without any mechanical instincts or inclinations—they will have to employ a skilled driver and this will, of course, add to their expense; and (2) those, at present by far the most numerous class I believe, who, taking a keen interest in their machine, find little difficulty in mastering its working, drive themselves, and are capable of making all minor adjustments and quickly correcting occasional delinquencies, ostensibly on the part of the car, but really more often due to some oversight of themselves. The latter class will only need to employ unskilled labour in the form of a lad or former coachman to clean the car, accompanying them on their rounds, and start the engine after a stop. Some form of non-skidding device attached to the rear or driving wheels is very desirable in winter. I am not an advocate of any special form of protection from the weather in the shape of a hood or screen. A good motoring coat which can, if desired, be worn over an ordinary top-coat is, as far as my experience goes, all that is required. This should be obtained from a firm who make a speciality of this particular garment, since the usual mackintosh by no means meets the requirements of a motorist. I think that all, or nearly all, those medical men whose circumstances and temperament enable them to be grouped into class 2 will bless the day that they adopted a motor-car. I am here obviously premising that class 2 will select their motor-car with judicious discrimination, having regard to their individual requirements.

I am, Sirs, yours faithfully,

Torquay, Oct. 19th, 1903. GILBERT J. ARNOLD.

PLASMON TEA.

To the Editors of THE LANCET.

SIRS,—Your analytical report of this preparation suggests the query whether the tannin in ordinary tea prepared in the usual way is not more completely precipitated and rendered as physiologically inert by the addition of a small quantity of milk. This milk tea is very palatable to many people and is certainly more economical than plasmon tea.

I am, Sirs, yours faithfully,

Oct. 19th, 1903. SIMPLEX.

*** Possibly; but the volume of milk required to have the same effect as plasmon would be out of all proportion to the tea, since plasmon as regards proteid represents 33 times its weight of milk, and the separation of tannin in plasmon tea is undoubtedly more effectual and complete than when milk alone is used.—ED. L.

THE CIGARETTE CRAZE.

To the Editors of THE LANCET.

SIRS,—With regard to the letter of "Doubtful" upon cigarette smoking in THE LANCET of Oct. 17th and your comments thereon may I suggest that the quantity as well as the quality of the tobacco consumed by cigarette smokers may be a factor in such results as may follow? "Doubtful" writes of "excessive cigarette smoking" being responsible for nerve trouble and then goes on to say that a man who smokes nine or ten cigarettes in a day does not smoke half an ounce of tobacco. I should have thought that a man who smoked cigarettes to excess smoked far more than nine or ten in a day, but that a man who smoked half an ounce of tobacco per diem in a pipe was a fairly heavy smoker. To put it in another way, the tobacco that will make a good-sized cigarette will amply fill a good-sized pipe, but if one man smokes cigarettes during the time that another consumes one pipeful of tobacco he will get through considerably more than one cigarette. There are reasons for this. The burning surface of a cigarette may be smaller than that of a pipe but the smoke passes through a tube (at all events where no mouthpiece is used) which is considerably larger than the bore of a pipe and the rapid burning is

not diminished by the tobacco of a cigarette being usually very dry. The inhalation of a cigarette is almost irresistible. I doubt if confirmed cigarette smokers would derive any satisfaction from smoking if they were merely to take the smoke into their mouths, and I expect that in this you have named the principal cause of the effects produced by excessive cigarette smoking, but it would be interesting to know your views as to what amount of tobacco is consumed in cigarettes by those who suffer from its effects. I fancy that average sized cigarettes run to about 16 to the ounce and that this would be a moderate allowance to some smokers in the day. "Doubtful" speaks of very mild tobacco being hot in a pipe. Does not this depend largely on whether it is fine-cut or not? I smoke a very mild tobacco, which is coarse-cut, and to me, at all events, it is not hot, but a mild tobacco is often very fine-cut and consequently liable to get dry and to burn fast or, at all events, to burn hotly. In the same way fine coal, with a good draught, burns with great heat.

I am, Sirs, yours faithfully,
Oct. 19th, 1903. E. A. A.

THE BY-LAW AGAINST SPITTING.

THE prompt enforcement of one of the London County Council's new by-laws at the Westminster police-court must have come as a severe shock recently to a man named Richard Donovan. He had persisted in spitting in a tram-car in the Wandsworth-road and had continued to do so upon being cautioned by the conductor, besides being abusive and refusing to quit the car. The evidence of the conductor was supplemented by that of a passenger who had had to move from his seat in order to avoid being spat upon. Two summonses were taken out by the County Council, one for spitting and the other for using obscene language, and Donovan was fined the full penalty, 40s., on each, with costs, the total amounting to £6 2s., with the alternative of a month's imprisonment. His fate should serve as a warning to others and as a protection to future travellers, while it will materially strengthen the hands of conductors of public vehicles and similar officials. An amusing story, by the way, has been told of a tram conductor in Dublin. An elderly lady from England travelling upon his car was much disturbed by the free expectoration indulged in by a passenger near her. Turning to the doorway she asked nervously, "Conductor, do you allow spitting upon your tram-car?" Mistaking her meaning the conductor, with bland politeness and a rich brogue which the reader must reproduce for himself, answered, "Certainly, madam; spit wherever you please."

PATHOLOGICAL PARLANCE.

THE Dean of Bristol, the Rev. Dr. Pigou, in a further volume of his reminiscences which has just been published, tells several good stories, amongst which is the following. A lady when leaving her house on the way to Divine service had omitted to take her reticule, or hand-bag, such as ladies carry. Her maid, in reminding her of this, said: "Please, ma'am, you have forgotten your appendicitis!"

SUBSTITUTION RAMPANT.

To the Editors of THE LANCET.

SIRS,—Your annotation headed "Substitution Rampant," in THE LANCET of Oct. 17th, p. 1104, seems to me to be of peculiar importance to those members of the public who are in the habit of purchasing the goods of well-known and old-established firms because their staple quality and permanence of value may be relied upon.

I have, rightly or wrongly, an old fashioned prejudice in favour of being supplied with exactly what I ask for, whether it be a food, a drug, a sauce, or a wine. It is most annoying to be told by otherwise reputable retailers that their own produce is as good as, or better than, what you have asked for. The reason of this attempted substitution is doubtless the opportunity of greater profits, but this has nothing to do with me as a regular purchaser who consistently buys certain brands and has no desire to experiment with imitations.

Your suggestion in connexion with a recent case of a pair of so-called solid leather boots, which were found to contain cardboard soles, seems to me to be excellent. There ought to be some system of control over such a deliberate fraud. Perhaps an existing Act could be so extended as to cover this, or in default a new Act framed expressly to protect the purchaser from such deception on the part of the seller.

If the different trades could combine among themselves and each decide upon some mark of guarantee, answering to the hall-mark on silver, thereby insuring the honesty of their goods, I am certain it would be of immense service both to themselves and to the public. I inclose my card.

I am, Sirs, yours faithfully,
Oct. 19th, 1903. F. S.

To the Editors of THE LANCET.

SIRS,—Your annotation under the above heading in THE LANCET of Oct. 17th, p. 1104, directs attention to, and very justly condemns, the vast amount of fraud which pervades a great deal of our present system of trading and which flourishes unchecked under the supine methods of control exercised by the authorities of the State. This deplorable and criminal lack of business morality, moreover, touches very closely a subject which is of the utmost interest and importance to the medical profession. I refer, of course, to the question of the purity of drugs and of accuracy and honesty in dispensing. There is no department of trading which calls for the exercise of more care and more scrupulous honesty than the manufacture and dispensing of drugs and there is no department of trading in which fraud is more difficult of detection. Yet I venture to suggest that substitution and adulteration are as rampant in this branch of commerce as in the others to which you have called attention. In these days of "store prices" and of "prescriptions carefully and accurately dispensed" the operation of the hall-mark you suggest would prove of inestimable service both to physician and to patient.

I am, Sirs, yours faithfully,
Upper Berkeley-street, W., Oct. 21st, 1903. E. H. COLBECK.

**** We may point out that our correspondent's view in regard to the accurate making up of prescriptions receives little support from an inquiry which we instituted upon this subject, the results of which were published in THE LANCET of May 2nd, 1903, p. 1251. Prescriptions, moreover, are subject to control under the Sale of Food and Drugs Act.—ED. L.

LIFE INSURANCE FOR HIGH RISKS.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me as to assurance companies which would consider proposals on the lives of persons proceeding to the West Coast of Africa, Nigeria, &c.? I have tried four companies without success.

I am, Sirs, yours faithfully,
Oct. 20th, 1903. CROSS.

A CONVENIENT SUBSTITUTE FOR A SAND-BAG.

To the Editors of THE LANCET.

SIRS,—Whilst casting about for a substitute for the weighty sand-bag I recently hit upon the following which may be useful to those of your readers who are called upon to perform operations which involve the use of a sand-bag. The bag is similar in composition to the fenders of a yacht's boat—i.e., it is made of canvas and is filled with cork dust. The result is a bag which combines lightness, firmness, and cheapness. I have used such a bag while operating on the bile-ducts and have found it to answer admirably. A cylindrical bag 20 inches in length and 16 inches in circumference weighs 31 ounces and costs 1s. 9*d*. The bag can be covered with mackintosh as is frequently done in the case of the ordinary sand-bag.

I am, Sirs, yours faithfully,
Plymouth, Oct. 19th, 1903. C. HAMILTON WHITEFORD.

Nook.—We should think that our correspondent would find all the information which he requires in the volumes dealing with insects which form part of the Cambridge Natural History published by Messrs. Macmillan and Co.

Syntax.—We do not think that our correspondent need have any fear of the General Medical Council regarding his connexion with the dispensary in question in the manner which he suggests.

Mr. T. Lafan.—The Tallerman Institute, 50, Welbeck-street, W., and the Dowsing Radiant Heat Company, 24, Budge-row, Cannon-street, E.C.

A Student.—Our correspondent has omitted to inclose his name and address.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.) Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat, (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (31st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (26th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M. Council. 8 P.M. The President: Inaugural Address. Paper:—Mr. J. Bland-Sutton: Teeth from the Temporal Bones of Horses.

MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Discussion on Purpura in Childhood (opened by Dr. A. F. Voelcker).

TUESDAY (27th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper: Mr A. Doran: Large Bile-Cyst of the Liver, Jaundice without Cholelithiasis, Incision and Drainage, Recovery (with epidiascope illustrations).

THERAPEUTICAL SOCIETY (Apothecaries' Hall, Blackfriars).—3.30 P.M. Council Meeting. 4 P.M. Annual Meeting. Election of Officers for the ensuing year. Demonstration of Roentgen Rays and Radium and Exhibition of Medical Plants and Instruments, Microscopical Specimens, &c. Paper:—Dr. H. Sainsbury: The Action of Carbon and of Bodies in the Particulate State.

WEDNESDAY (28th).—HUNTERIAN SOCIETY (London Institution, Finsbury circus, E.C.).—8.30 P.M. Clinical Evening.

THURSDAY (29th).—MEDICO-PSYCHOLOGICAL ASSOCIATION (South-Eastern Division) (St. Luke's Hospital, E.C.).—3 P.M. General Meeting. Dr. W. Rawes: A Short History of St. Luke's Hospital. Discussion on the Relation of Hysteria to Insanity (opened by Dr. Eldridge Green).

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8 P.M. Card Specimens will be shown by Mr. G. H. Goldsmith, Mr. W. A. Frost, Mr. R. W. Doyne, and Mr. S. Stephenson. 8.30 P.M. Presidential Address. Papers:—Mr. E. Nettleship: Tumour of Choroid in an Eye with Old Choroiditis.—Mr. J. H. Fisher: A Case of Tumour of the Choroid associated with Iritis.—Major F. O'Kinealy: An Anomalous Case of Tobacco Amblyopia.—Mr. S. Mayou: The Pathological Anatomy of the Plaques in Epithelial Xerosis.

CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Lecture:—Mr. A. W. Newton: Psychology and Education.

FRIDAY (30th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. General Meeting. Address:—The President (Dr. A. F. Street): Some Questions in Seaside Climatology.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (26th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M. Dr. Saunders: Examination of the Stomach and Gastric Contents.

TUESDAY (27th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. H. Cole: Heredity and Insanity.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Tooth: Anatomy of the Spinal Cord.

WEDNESDAY (28th).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M. Dr. Beddard: Practical Medicine. (Second Lecture.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Habershon: Bronchiectasis.

THURSDAY (29th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery. (First Lecture.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Dr. McCann: The Methods of Examination employed in Gynæcological Diagnosis. (Demonstration of Instruments.)

CHARING CROSS HOSPITAL.—4 P.M. Dr. Murray: Demonstration of Medical Cases. (Post-Graduate Course.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. R. M. Leslie: Acute Inflammatory Affections of the Lungs and Pleuræ.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Colman: Speech Defects in Children.

FRIDAY (30th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. C. Williams: Electro-Therapeutics.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Tooth: Localisation in the Spinal Cord.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

***Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.**

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 22nd, 1903.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 a.m.
Oct. 16	29·70	W.	...	95	58	46	45	48	Cloudy
,, 17	29·72	N.W.	0·01	76	56	48	48	51	Cloudy
,, 18	29·99	S.W.	...	66	55	48	50	52	Overcast
,, 19	30·03	S.W	0·10	65	57	48	49	50	Overcast
,, 20	29·91	S.W	1·03	66	56	50	52	54	Raining
,, 21	29·69	S.W	2·07	68	57	53	53	55	Overcast
,, 22	29·49	S.W.	0·22	77	56	49	52	53	Raining

During the week marked copies of the following newspapers have been received: *Daily News, Star, Lincolnshire Echo, Hertfordshire Mercury, Southern Times and Dorset County Herald, Highland News, Burnley and District Times, Staffordshire Sentinel, Westminster Gazette, Windsor and Eton Express, Manchester Guardian, City Press, Times, Walsall Advertiser, Herts Advertiser, Reading Mercury, Mining Journal, Midland Medical Journal, Surrey Advertiser, Yorkshire Post, &c.*

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